Vol. 45 APRIL, 1954 No. 4

The Journal of Educational Psychology

UNIVERSITY OF MICHIGAN
JUN 3 - 1954
PERIODICAL READING ROOM

CONTENTS

An Experimental Comparison of Recitation, Discussion, and Tutorial Methods in College Teaching 193
HAROLD GUETZKOW, E. LOWELL KELLY, AND W. J. McKEACHIE

Validity of an Objective Examination for the Placement of Foreign Students in English Courses 208
IRVING LORGE AND LORRAINE KRUGLOV DIAMOND

Motivational Differences between High and Low Scholarship College Students 215
WILLIAM F. BROWN, NORMAN ABELES AND IRA ISCOE

The Problem-oriented Approach to Teaching Psychology 224
W. J. McKEACHIE AND WESLEY HILER

How Student-teachers Identify Responsibility in Children 233
DALE B. HARRIS

Falsification of Interest Patterns on the Kuder Preference Record 240
EDWARD J. DURNALL, JR.

The Relationship between Class Absences and College Grades 244
ALEXIS M. ANIKEEFF

Book Reviews 250

Publications Received 255

Published monthly except June to September
$7.00 a year in the United States; Canada, $7.20; other countries, $7.40.
Single issues $1.20

WARWICK & YORK, INC.
BALTIMORE 2, MD.

Entered as Second Class Matter Nov. 15, 1921, at the Post Office at Baltimore, Md. under the Act of March 3, 1879.

THE JOURNAL OF Educational Psychology

Established 1910

BOARD OF EDITORS*

STEPHEN M. COREY, *Chairman*
Teachers College
Columbia University

J. B. STROUD
State University of Iowa

WM. CLARK TROW
University of Michigan

* Appointed by the American Psychological Association.

EDITORIAL CONSULTANTS

PAUL BLOMMERS
HAROLD E. JONES
H. H. REMMERS
PERCIVAL M. SYMONDS
MILES A. TINKER
ALEXANDER G. WESMAN
PAUL A. WITTY

THE JOURNAL OF EDUCATIONAL PSYCHOLOGY is devoted primarily to the scientific study of problems of learning, teaching, and measurement of the psychological development of the individual. The JOURNAL will contain articles on the following subjects: the psychology of school subjects; experimental studies of learning; the development of interests, attitudes, and personality, particularly as related to school adjustment; emotion, motivation, and character; mental development and methods. This last will include tests, statistical techniques, and research techniques in cross-sectional and developmental studies.

INFORMATION FOR CONTRIBUTORS

Manuscripts and communications regarding editorial matters should be addressed to the Chairman of the Board of Editors, Stephen M. Corey, Teachers College, Columbia University, New York 27, N. Y.

THE JOURNAL has set regulations regarding content and style of material published, and these should be observed in the preparation of manuscripts to be submitted.

Tables and graphs.—In keeping with the practice of most professional periodicals of like character, THE JOURNAL now requires authors to bear part of the added cost resulting from the use of tables, formulas, and graphs. Prospective contributors may obtain detailed statement as to

(*Continued on Inside Back Cover*)

THE JOURNAL OF

EDUCATIONAL PSYCHOLOGY

Volume 45 April, 1954 Number 4

AN EXPERIMENTAL COMPARISON OF RECITATION, DISCUSSION, AND TUTORIAL METHODS IN COLLEGE TEACHING[1]

HAROLD GUETZKOW

Carnegie Institute of Technology

E. LOWELL KELLY and W. J. McKEACHIE

University of Michigan

In 1946–47 the Psychology Department of the University of Michigan instituted a seminar with academic credit for graduate students who were teaching sections of the introductory course. During the first semester the seminar reviewed the literature on experiments in teaching methods. They then wanted to evaluate their own teaching techniques. This experiment was undertaken as a 'work shop' project of the seminar.

During the second semester of 1946–47 there were 865 students enrolled in the elementary general psychology course at the University of Michigan. The course carried three hours' credit. Each student spent one hour a week in a large lecture section and two hours in small class sections. The students were divided into three lecture groups (N = 250 to 300) and twenty-six class sections (N = 25 to 35). The same lecture was delivered three times on Mondays and Tuesdays. The two weekly class meetings were held on Wednesdays and Fridays. The lectures were given by a senior staff member

[1] The following assisted in planning and carrying out this experiment: Robert D. Boyd, Everett W. Bovard, Robert G. Givvy, Theodore N. Hariton, William H. Hossick, Norton B. Knight, Ernest J. London, Elizabeth A. Malcolm, Herbert H. Meyer, Elliot G. Mishler, Harvey Schrier, Audrey A. Snyder, and Philip I. Sperling.

and the small section meetings were conducted by psychology graduate students.

THE PRIMARY FOCUS OF THE EXPERIMENT

In common with others who take seriously the task of teaching, the seminar group often found its deliberations ending in disagreement. We concluded that the primary prerequisite for our work was the construction of better instruments to evaluate the outcome of our teaching in elementary general psychology. It was assumed that the sensitivity of such instruments might be determined by whether they discriminate between teachers of varying quality and by whether they reflect differences in teaching procedure. It was important to develop external criteria of the efficacy of our teachers and to teach sections according to widely divergent methods.

In order to determine what evaluative measures were needed, it was necessary to decide upon the objectives of the general psychology course. To aid in the definition of these objectives each member of the seminar presented his view as to what the objectives of the course should be. Two student sections in the general psychology course also discussed goals of the course. Results of these discussions and papers were then considered and the following tentative goals were formulated:

1) Understanding of the facts and principles of psychology basic for further study of psychology or for use in other areas of life.

2) Ability to apply learning to aid the student's understanding of human behavior in his everyday life.

3) Development of a scientific and analytic attitude toward human behavior: (a) Understanding multi-causality. (b) Familiarity with the experimental approach. (c) Increased skill in formulating conclusions. (d) Increased skill in evaluation of conclusions. (e) Ability to distinguish between fact and opinion.

4) Awareness of the adaptability of human nature. (a) Recognition of the limitations of attempts to change adult human nature. (b) An attitude of understanding toward individual differences.

5) An appreciation of the value of psychology.

THE DESIGN OF THE EXPERIMENT

The design of the experiment was dictated by a number of conditions. First, of course, was the imperative consideration that we needed to teach the elementary course in such a way that all stu-

dents passing the course, regardless of the method used, were qualified to go on to the other courses in psychology offered by the department. Second, the fact that we had multiple objectives demanded we use a wide variety of criterion instruments. A number of instruments died a-borning; sometimes their reliabilities were simply too inadequate. In the end some thirteen instruments were utilized to provide criterion measures. Third, we noticed the relative inability of previous researchers in the area of teaching to secure differences, no matter what instruments were used. We wanted to contrast teaching methods which at least on a priori grounds might be differentially effective. In addition, we wanted to test some of the differences in method we were hotly arguing about in the seminar from time to time. It was practical to compare three methods. In summary, the design may be stated in the null form: There will be no significant differences in outcome with respect to course objectives between students whose class meetings are taught by Method 1 and those students who are taught by Method 2 or by Method 3.

THE TEACHING PROCEDURES

Eight teaching fellows each taught three sections—one by each of the experimental methods. Thus eight of the twenty-four sections[2] were taught by each of the three methods. In addition to the common lecture, all students were given the same assignments, used the same textbook, and were provided with the same opportunity to see educational movies and take sample tests, as outlined in the syllabus. Hence, the students were given a common core of lectures, movies and test demonstrations, and text and supplementary reading assignments. The teaching method was varied only with respect to the procedures used in the two section meetings per week. No explicit announcement was made to the students that an experiment was in progress.

During the week before classes actually started the following memorandum was issued and discussed by the eight instructors who were teaching the twenty-four sections of the elementary course:

The suggested variable in the experiment for the spring semester is teaching technique. Three types of teaching technique would be

[2] Two sections taught by the course administrator were not used in the experiment.

compared: Drill—recitation; group—discussion; and study—tutorial. This variable was chosen rather than class size because experimental evidence indicates that variation in size produces negligible variation in performance, unless technique is also varied. These three techniques represent different degrees of directed vs. non-directed and group vs. individual work.

1) *Recitation—Drill.*—This method will be instructor directed, instructor paced, instructor dominated. A quiz will be given at each class meeting. The instructor will bring a list of prepared questions to class. Students will be called upon to answer and will be marked on their recitation. Each day the instructor will present a short lecture-drill on the fundamentals.

2) *Group—Discussion.*—The discussion section is to be regarded as a supplementary tool used in conjunction with the text, the lectures, and the readings. It operates on the assumption that merely telling the student or having him read is insufficient. Students must formulate and discover the relationships themselves. Instead of drilling facts, it attempts to clear up misconceptions and integrate the concepts of the course.

The discussion group creates an atmosphere in which the student feels free to expose his misconceptions, so they can be corrected; he is encouraged to bring in the problems which have troubled him in the assignment; he is stimulated to utilize the basic concepts of the course to interpret incidents which occur in his day-to-day living. An attempt should be made to establish the sense that the class works together; each person learns from the other as well as from the instructor. Being a member of a group, he is carried along by the group's enthusiasm and interest. The student should be given to feel that only by actually participating in the discussion will he, himself, gain a usable understanding of the content of the course.

Functions of the instructor.—At various times the instructor will serve in the following capacities: Chairman: presiding, deciding order of speakers, etc.; Summarizer: at appropriate times throughout and at the end of each class meeting, he should summarize the ideas discussed. Sometimes this summarizing function will express itself as a resolution of a conflict among discussants. Each class meeting should end with a sense of having actually covered ground. Discussion Stimulator: on needed occasions the instructor will ask inference questions, read case-histories, perform demonstrations,

etc., to stimulate fruitful controversy and increase the 'reality' of the discussion. Informant: at times the instructor will supply data and expert knowledge, because of his background in psychology. At no time will the instructor lecture. If he desires to present material not included in the readings or lecture, he should ask a number of the better students to prepare a symposium on the topic, or use some other student-participant device.

Special Facilitating Devices.—In order to facilitate the discussion atmosphere, the following techniques are suggested: Techniques to reduce the restraint: (1) no grade should be given on the discussion itself; this may allow the student more freedom in revealing his ignorance and misconceptions; (2) by arranging the seats in a U shape, it may be possible to remove part of the traditional classroom restraint; the students then can talk to each other as well as to the instructor; (3) have the students introduce themselves on the first day; supply the class with a seating chart and names of fellow-classmates; use first or only last names (omitting Miss or Mr.) to create informality.

Techniques to spread participation: (1) encourage comments made by reticent students; quash 'stars' who monopolize; (2) after a few weeks, ask backward students to bring written questions, which can be read aloud. Sometimes have all the students answer a question raised by writing out the answer during classtime; this gives the poorer students a chance to participate. Have students look up facts and answers in their text, so that poorer ones can read answers and learn to contribute, using text as prop; (3) essay thought-type tests, once every other week, except when course exams are given.

Discussion instructors might introduce their work by mentioning Lewin's experiments on group decision.

3) *Tutorial—Study.*—This method will emphasize an individualized approach with the student pacing his own work within the framework of the course. No quizzes will be given, but occasional written papers will be required. The class work will be relatively undirected as compared with the Drill—Recitation method. The instructor will bring other elementary texts for references and demonstration apparatus to class. He will not conduct the class formally, but will be available to the students for consultation throughout the hour. The students will utilize the hour for study and consultation. The instructor will endeavor to help the student

to find the answer to his questions rather than answering them himself. Social conversation will be prohibited. This method is based on that reported favorably by Scheidemann (*Sch. and Soc.*, 1927, 25, 672–674.).

INSTRUCTOR VARIABILITY

In comparing teaching methods, one is always faced by the problem of the interaction between teacher and method. We chose to assign each instructor to teach three sections—one by each of the three methods. To reduce differences in instructors' abilities and motivations for teaching the different methods, the entire group actively participated in the general planning for each teaching method. In addition, three special committees were appointed, one to represent each of the three methods. Each committee was responsible for seeing that its method was used effectively. Thus, the 'recitation committee' worked out quiz questions and other aids for the Recitation—Drill classes; the 'discussion committee' provided lists of suggested discussion questions for each day's Group—Discussion classes, and the 'tutorial committee' provided demonstrations and reference books to be taken to the Tutorial—Study classes. We attempted in this way to make sure that each method got a fair trial.

The time sequence of methods was varied from instructor to instructor so that no method would consistently be used for the instructors' first sections to be taught during the week. All permutations of the order of methods were used.

EQUATING OF GROUPS

While we did not know what factors enter into students' choice of sections, we suspected that we could not assume that our classes were equated in intelligence and other possibly relevant variables. During the first and second class periods of the initial week of the semester, basic sampling data were obtained and an Otis Test of Mental Ability (Higher Form A) was administered to each section.

To carry out the process of equating groups, summary sheets for each section were compiled. For all hours, with two exceptions, all teaching techniques were represented each hour. It would have been inconvenient to attempt to change the time-schedule of the students. Hence, students were shifted to equate sections within each hour. Although it was not possible to obtain complete equa-

tion of the sample for all sections on all characteristics, we were able to make the students of each section typical, in the sense that each had an appreciable number of women, veterans, etc., and mean score intelligence and grade point average were perfectly matched.

During the first period of the second week, the students were asked to give order of their preference for the three teaching methods: Recitation, Discussion, Tutorial. This was treated lightly, with the suggestion that there was much disagreement among the students about the best method. After the preferences were collected, the instructor presented his rationalization for the method to be used in this particular section. We wanted to help the students feel that they should give the method a try; that even though it might be new to them, it had been used successfully before. If a student asked whether an experiment was being conducted in the class, he was told that because no crucial experiments on teaching had been done, various methods were always being tried out by different teachers.

The students were asked to indicate their method-preferences again at the end of the semester. The instructors also indicated their preferences for teaching method at both times.

MEASURES OF OUTCOME[3]

Course examinations.—Academic achievement in the course was judged primarily on the basis of scores on objective achievement tests. Three course-wide objective tests were given. The first took place at the end of the initial four weeks of the course. A mid-term examination was given after eight weeks of the course, and a final examination at the completion of the course. Coverage in these examinations was retroactive, in that each sampled all of the material covered up to that time in the course. During the semester only standard multiple-choice questions of the one-best-answer type were used.

The system used for constructing the examinations was as follows: H. H. Meyer was placed in charge of the construction of the

[3] To save printing costs, detailed tables of results and all measures used in the experiment are included in an appendix which has been deposited with the American Documentation Institute. Order Document No. 4013 from American Documentation Institute, 1719 N. St., N. W., Washington 6, D. C., remitting $2.00 for 35 mm. microfilm or $3.75 for 6 x 8″ photocopies.

examinations. The other teaching fellows submitted questions and suggestions on the respective assignments. On the basis of the course objectives and the material covered, Meyer drew up a table of specifications for the examination to be given, selected items submitted, and wrote new items to fit the table. This preliminary edition of the list was submitted at a meeting of all teaching fellows, and items were altered or eliminated. The revised examination was then further edited by Meyer, and the final edition constructed.

Since one of the objectives of the course was that the students should be able to apply to life-situations the principles they had learned, many of the items were 'application' questions. The question then arose as to whether such questions were actually measuring the intelligence of the students more than their knowledge of psychology. This hypothesis was tested by dividing the final examination into two parts, consisting of fifty questions testing the memory of facts and fifty questions of the application type. The scores of these parts were correlated with the students' scores on the Otis examination, which was used as a measure of intelligence. The hypothesis was sustained to some extent. The correlation between Otis and Factual question scores was only .17, while the correlation of Otis and Application question scores was .41. The t-test of the difference between the correlations is 1.6—significant at the .05 level.

USAFI Examination.—In addition to the tests and final examination, the United States Army Forces Institute Examination in elementary psychology was used as a measure of achievement. In 1946–47 this test was one of the few standardized achievement measures in general psychology.

We had also hoped to use essay tests as measures, and spent a good deal of time attempting to develop reliable scoring methods. However, we were unable to raise the scorer-reliability above .60 on the kind of broad questions which seemed necessary to us if we were to develop measures of anything more than the achievement sampled by our objective tests. Hence, essay tests were not included in our battery of measures.

Misconceptions.—One of the objectives of the course was to teach in such a way that the student's knowledge of psychology was carried over to his everyday thinking. If this were accomplished, common misconceptions about human behavior should be effected

even when the misconceptions are not specifically discussed. Hence, a test to measure this outcome was devised by McKeachie.

This test, consisting of three parts, was constructed from common misconceptions submitted by the teaching fellows and from Valentine's list (*7*). Part 1 consisted of eleven multiple-choice items. Part 2 consisted of seventeen true-false items, the conventional form for misconception items. Part 3 consisted of ten proverbs. These statements were common stereotypes meeting acceptance in everyday conversation, which from a psychological viewpoint were not completely accurate. The students were asked to decide whether the proverb contained more truth or falsehood. The split-half reliability of this test was .73 (estimated for the whole test).

Conceptions of parenthood tests.—Duvall (*2*) has classified responses of four hundred and thirty-three Chicago mothers of different class levels to the two questions: "What are five things a good mother does?" and "What are five things a good child does?" into two categories—'traditional' and 'developmental'. The traditional responses are characterized by a desire to make children conform to a rigid conception of the rôles of mother and child. The developmental responses are characterized by respect for the child as a person and by expectations of mother and child in terms of growth and development rather than as specific behavioral conformities. A course in general psychology might be expected to produce a more developmental conception of the rôles of mother and child. With this hypothesis a test was created by McKeachie using responses listed by Duvall as typical of traditional and developmental conceptions. Split-half reliability of the test was .80, estimated for the whole test.

Scientific and analytic attitude toward human behavior.—McCandless' (*5*) test of analytic attitude toward human behavior was our measure in this area.

To measure our objective of creating a favorable attitude toward psychology an eight-item Likert-type scale was constructed. The split-half reliability of the test was .75. As another indication of the attitude of the students toward psychology, students were asked to check the advanced courses in psychology which they would like to take on a list of those offered to undergraduate non-majors. A potentially significant measure of the student estimate of value of the elementary psychology course is the number who decide to

TABLE 1.[2]—MEAN SCORE SUMMARY OF RESULTS

Measure	Recitation-Drill Mean Score	Group-Discussion Mean Score	Tutorial-Study Mean Score	CR for Difference Between Means of Highest and Lowest
Final Examination	97.7	96.5	95.8	2.7
USAFI	57.2	57.4	57.3	*
Misconceptions	49.6	49.3	48.9	*
Parenthood	8.9	8.6	8.8	*
Analytic Approach	7.6	7.6	7.8	*
Attitude Toward Psychology	21.3	21.9	20.8	1.8
Number of People Planning to Concentrate	19	7	11	2.4
Number of Advanced Courses Student wants to take	4.3	3.9	3.6	2.9

* Less than 1.0.

concentrate in psychology while enrolled in the course. Students were asked at the beginning and end of the course in what subject they intended to concentrate.

RESULTS IN AREA OF ACADEMIC ACHIEVEMENT

The traditional method of measuring course outcome is a final examination. One of the students' chief goals in a course is to pass the examination. As indicated in Table 1, with respect to this conventional criterion our three methods ranked in the order: Recitation—Drill; Group—Discussion; Tutorial—Study. It should be noted that the absolute difference between the means of Recitation and Tutorial method is only 1.9 score points, and, although statistically significant, it is so small as to be of dubious social significance.

Not only are the differences between instructuors not statistically significant, but there was no significant interaction between instructor and method. These results bring small comfort to those who look upon teaching as an art dependent upon the personality of the instructor.

What was the relative effectiveness of each method for different degrees of intelligence within the range of this class? Measured by scores on the final examination, the recitation method was found to be more effective for all levels of intelligence in our group. This was contrary to our general expectation that the recitation method would be effective for poor students, but not for bright ones.

The United States Armed Forces Institute Examination in elementary psychology (Form A) was given to about two-thirds of the students enrolled. All of the students in designated sections took the test so that there was no selective factor. Students were informed that the test would not count in their grades, and they need not make special preparation for the test. They were urged to do their best, but inasmuch as they knew their score would not count in a grade, many students were probably not as highly motivated as if it had been their final examination. In spite of this lack of motivation, a mean score for all three groups was about the 70th percentile on the norms given for the test. Differences between the means for groups taught by different methods were not significant.

The possibility that one method stimulated or forced students to do more work outside of class than the other methods used was considered. The students were asked during the fourteenth week to estimate, anonymously, the total time they had spent on psychology outside of class in a two-week period when there had been no course-wide tests. Results showed negligible differences between the three methods. This measure may be inappropriate, in that a good teaching method may stimulate a student to more study, while a poor one may so confuse him that he is forced to spend more time in study.

OUTCOME IN THE APPLICATION OF PSYCHOLOGY TO EVERYDAY LIVING

Like Horrocks (*4*) we find nothing in our results to encourage hope that one of our methods is superior in teaching students to apply psychology to life. There were no significant differences between method on either the misconceptions test or the parenthood test. However, like others who have constructed misconceptions tests, we found that college students accept a number of common misconceptions. Every misconception in our test was accepted as true by at least some students. And this after the elementary semester course!

There were no significant differences between methods measured by student scores on the McCandless test.[4]

---

[4] Such negative results may be due to insensitive measures of ineffective variables. A pre-course post-course comparison of scores on these measures was obtained later. There were no significant gains on either the misconceptions or the analytic thinking tests.

Results of our scale of attitude-toward-psychology showed students in the group—discussion sections to possess slightly more favorable attitudes toward psychology than students in tutorial—study sections ($P = <.03$), with students in recitation not significantly different from either of the others. However, most students in all sections had distinctly positive attitudes toward psychology as measured by our scale.

Students being taught by different methods differed in the number of advanced psychology courses which they wished to take, with Recitation—Drill again leading. The critical ratio for the difference of the means of the recitation and tutorial sections is 2.9, which is statistically significant. A follow-up study three years later indicated that students in recitation sections actually did take more advanced psychology courses than students in other sections. Note that in the class as a whole, regardless of method, the average student would like to take four more psychology courses. Frankly, we were somewhat surprised by this interest in further course work in psychology.

While the numbers involved are small, a significantly larger number of students in recitation sections chose to concentrate in psychology than students in the other two types of sections.

As another measure of the value attached to the course we had hoped to use the number of cancelled registrations. However, exclusive of those who dropped the course during the first week, i. e., before the different techniques of instruction were introduced, only seven students dropped out of the course. Three of these students were in discussion sections and two each in recitation and tutorial sections. Contrary to the prophecies of some of the local Jeremiahs, there was no mass exodus from any method.

ATTITUDES OF STUDENTS AND INSTRUCTORS TOWARD TEACHING METHODS

An indication of the students' attitude toward the method of instruction used is the shift in their preferences in the beginning of the experiment to their preference at the end of the course. At the beginning of the semester the recitation and discussion methods were approximately equally preferred and the tutorial somewhat less so. Students in recitation classes showed a statistically significant gain in their preference for recitation, while students in dis-

cussion and tutorial sections showed no significant changes in preference.

What is the relationship between the student's preference for a method and his success in learning by that method, as measured by the final content examination? It will be remembered that students originally were matched on the basis of grade-point average and Otis scores within each method. Using scores on the final examination as a criterion, we found no significant differences between students who initially preferred the method used and those who initially ranked as least preferred the method to which they were actually subjected.

The attitudes of the instructors toward the three methods of teaching were assessed at the beginning of the semester and again at the end of the sixteenth week of the semester, before any of the instructors had knowledge of final results. At the beginning of the semester, there was a slight preference for the group discussion method, with recitation-drill and study-tutorial methods preferred about equally. By the end of the semester preference for the recitation method had increased to approximately equal that for discussion while preference for tutorial had dropped appreciably. No teaching fellow ranked the tutorial method higher at the end of the experiment than he had in the beginning. It is interesting to note that while some instructors still preferred teaching by the discussion method and expected results to justify their preference at the end of the semester, their preference was not borne out by the results. Yet most of our teaching is based upon what methods teachers prefer.

DISCUSSION

By and large, we found no differences between the three teaching methods from the point of view of educational outcome. The few statistical differences, in general, favored the recitation-drill method. The results of the experiment, of course, were contrary to our original expectations. They constitute a clear confirmation of the general conclusion derived from experiments on instructional procedures since the early 20's. As Good recently put it, after reviewing the literature in this area, "The complexity of the teaching-learning process is such that attempts to establish the relative merit of a 'general method' of teaching are likely to prove incon-

clusive" (*3*, p. 275). Our results are thus in line with other investigations, despite the fact that our teaching methods seem to be much more extreme in their differences than had been the case in earlier experiments.

One of the criticisms which is commonly made of the earlier experiments on instructional procedures is the limitation of the appraisal instruments, inasmuch as they usually measured only memory-knowledge outcomes of the particular course. Our experiment included a number of measures of attitude. Yet we obtained few differences among our groups with respect to terminal attitudes in the course. Perhaps the 'general methods' comparison is also going to prove unfruitful even when a broader set of educational outcomes are evaluated.

Our experiment is inadequate in two important ways. Little work was done using delayed measures, which might have turned up differences between our methods after six months or more had elapsed after the end of the course. Perhaps an even more significant inadequacy of our experimental design rests in the fact that the instruction was given by inexperienced teachers who were just at the beginning of their college teaching careers. Cogent to this limitation is Peters' (*6*) experience that as his high-school teachers continued their work with a new technique into the second year, the difference between his traditional and experimental groups became stronger, as exhibited on a test of information.

Perhaps the most important factor which tends to eliminate differences in comparing different teaching methods is the fact that the experimental manipulation of the instructional procedure affected such a small segment of the students' learning process. The student comes to us from a long series of classroom experiences which have emphasized content acquisition. His three semester hours in the elementary psychology course are only three in the 120 semester hours he needs for his graduation from a large university. Even within our course we gave common examinations to all of our students, regardless of the teaching methods used. They attended the same lecture each week. They all had opportunity to see the same movies. With well-matched student groups and a design which held the personal characteristics of the instructors constant, we obtained no differences among our students when we subjected them to comparatively small differences in environment. There was more difference between our teaching methods than in

most other experiments reported to date. We used a wider variety of outcome measures than had been used up to 1946. Yet, the variations in our instructional procedures were too small, when contrasted with the other factors which remain constant, to greatly affect the outcomes of the learning process.

We still believe it is of vital importance to gain a better understanding of the effects of differences in instructional procedures. But the fact that the classroom situation involves so many variables, and that the interactions among these variables are considerable, means that more fundamental research is needed upon the quasi-isolated sub-systems within the total educational process.

REFERENCES

1) C. E. Buxton. "The pros and cons of training for college teachers of psychology." *Amer. Psychologist*, 1949, 4, 414–417.

2) Evelyn Duvall. "Conceptions of parenthood." *Amer. J. Sociol.*, 1946, 52, 192–203.

3) C. V. Good. "Colleges and universities: VIII. Methods of teaching." In W. S. Monroe (Ed.), *Encyclopedia of Educational Research.*, pp. 273–278. New York: Macmillan, 1952.

4) J. E. Horrocks. "The relationship between knowledge of human development and ability to use such knowledge." *J. appl. Psychol.*, 1946, 30, 501–508.

5) B. R. McCandless. *McCandless Attitude Toward People's Behavior Test.* Mimeographed material available from author.

6) C. C. Peters. *Teaching High School History and Social Studies for Citizenship Training.* Coral Gables, Fla.: Univ. of Miami Press, 1948.

7) W. L. Valentine. "Common misconceptions of college students." *J. appl. Psychol.*, 1936, 20, 633.

VALIDITY OF AN OBJECTIVE EXAMINATION FOR THE PLACEMENT OF FOREIGN STUDENTS IN ENGLISH COURSES

IRVING LORGE

Teachers College, Columbia University

and

LORRAINE KRUGLOV DIAMOND

The City College, New York

With the post-war influx of foreign students to American universities the problem of adjusting the college curriculum to the needs of foreign students became a pressing one. The need to place foreign students in English courses at levels appropriate to their mastery of the English language has been one of the major factors leading to revisions in the curricular offerings for foreign students. In addition, it forced the exploration for techniques by which such students could be placed in appropriate English courses.

A common-sense approach suggests that the student's experience with English in his native land would be a satisfactory basis for placement of foreign students in English courses at American universities. Schueler reflects the experience of many college instructors, placement advisors and administrators with the comment: "It has been found that one of the most unreliable indexes of a student's knowledge is the number of years of formal English study that he had in his native land. It has become necessary, therefore, to measure the student's command of English before admitting him to the appropriate section in the program. [The Queens College English Language Institute for Instruction of Students of Heterogeneous Linguistic Background]" (*3*).

The placement of foreign students in English courses became particularly acute at Columbia University which admits approximately a thousand foreign students each year for undergraduate and graduate study. The students, who come from almost every country of the world, vary in amount of education in general, in quality of preparation in the English language, and in the lengths

of time they have lived in the United States before coming to Columbia University. Because of these wide differences, it became necessary to provide English courses at levels appropriate to the mastery of English these students have.

At Columbia University, two placement tests, one written and the other oral, were developed as aids in the placement of students in the appropriate English courses. Two course sequences are provided for foreign students, one for written composition, grammar and reading, and the other for oral composition and conversation. The written test is for placement of students in the writing sequence; the oral test for the speaking sequence.

The present study reports on the relation between the written test and success of foreign students in courses in writing and reading.

THE ENGLISH EXAMINATION FOR FOREIGN STUDENTS

Two parallel forms of an *English Examination for Foreign Students* were developed by the Institute of Psychological Research at Teachers College, Columbia University. The current forms of the tests have been revised on the basis of extensive item analyses involving thousands of students: test-retest, and test-alternate test, correlations indicate that both forms are reliable.

The test, with its four multiple-choice subtests, requires sixty minutes for administration. To minimize confusion in answering, foreign students mark their answers in the test booklet by drawing a circle around the correct response.

Parts One and Two are a thirty-five item and a ten-item subtest, respectively, measuring English usage. The items are based upon actual usage errors made by foreign students. Part Three is a sixty-item vocabulary test, and Part Four is a reading comprehension test of three brief passages each of which is followed by five four-choice questions. The total score (maximum 120 points) over all four points is obtained for each student. A more detailed description of the *English Examination for Foreign Students* is given in a a recent article (*2*).

ENGLISH COURSES FOR FOREIGN STUDENTS

The hierarchy of courses in writing and reading for foreign students in the School of General Studies of Columbia University

follows:

Name	Title	Semesters	Points
G.S. English eV1	Introductory English for Foreign Students	1	4
G.S. English eV3 and eV4	Intermediate Written Composition, Grammar and Reading	2	4, each semester
G.S. English V9	Advanced Written Composition, Grammar and Reading	1	4
G.S. English A3	English Composition for Foreign Students (equivalent to the freshman course in English composition)	1	4

COURSE PLACEMENT ON THE BASIS OF THE ENGLISH EXAMINATION FOR FOREIGN STUDENTS

Cut-off scores were established for the placement of students into the five English courses. The primary criterion is the score on the *English Examination for Foreign Students* (EEFS). Advisors, however, in considering other information about the students, do not adhere to the established cut-off points. Frequently, indeed, students are placed in a course despite the fact that their EEFS scores are above or below the established cut-off points for that course.

The cut-off points[1] established for eV1 Introductory was 0—40; for eV3 Intermediate 1, 41–55; for eV4 Intermediate 2, 56–70; for V9 Advanced, 71–90; and for A3 Freshman English, 91–120.

THE PRESENT STUDY

The present study is a report on the value of the *English Examination for Foreign Students* in predicting success in English courses, where success is defined in terms of the final grade assigned in the course. Final grades cover an eleven step range: A+, A, A−, B+, B, B−, C+, C, C−, D, F.

For three hundred and seventy four students, who had taken the *English Examination for Foreign Students*, final grades were available on completion of one of the five courses. Only the initial course

[1] These cut-off points have been modified since the present study was initiated.

placement was considered. The relation between letter grades, considered as eleven steps from A+ to F, and EEFS tabled for the five courses gives the essential information. In addition, the final grade distribution is reported for each course for those students whose EEFS scores were within the established range for the course and for those students whose EEFS scores were above or below the established range.

CORRELATIONS BETWEEN EEFS SCORES AND FINAL GRADES IN ENGLISH COURSES

The product-moment correlations between EEFS scores and final grades in English courses are given in Table 1 for the five courses. These range from .31 to .65.

These obtained validity coefficients resemble those of other investigators for English speaking students. Huddleston reported median correlations between four different objective and subjective test measures of English writing competence and freshman English grades as ranging from .23 to .46, with the median correlation between an objective English test and course grades as .34. In a more intensive study, Huddleston reported a correlation between an objective English test and high-school English grades of .60. In her review of the literature on objective English test prediction of final English course grades, Huddleston indicated that the range of validity coefficients was from .11 to .73, with the median about .50.

The obtained validity coefficients for the foreign students are based upon restricted ranges. The EEFS scores for students in any

TABLE 1.—ENGLISH EXAMINATION FOR FOREIGN STUDENTS: VALIDITY COEFFICIENTS BETWEEN SCORES AND FINAL GRADES: BY ENGLISH COURSE

Course and Level		No. of Students	Obtained Correlation	Correlation Corrected for Curtailment of Ranges
eV1	Introductory	63	.38	.45
eV3	Intermediate 1	76	.40	.60
eV4	Intermediate 2	34	.65	.87
V9	Advanced	110	.31	.56
A3	College freshman	91	.45	.76

course are not distributed over the entire range of EEFS scores. Such curtailment of range on one variable tends to reduce the obtained validity coefficient. To estimate the validity for the full test range the correlations were corrected for restriction of range on one variable. (4) The corrected validity coefficients are presented in Table 1.

Thus, either on the basis of the obtained, or of the corrected, validity coefficients, the EEFS seems to result in predictions as satisfactory as those for objective tests of English for native English-speaking students.

However, while the ability in English of the native English-speaking student may be considered stable by the advanced high-school or college level, that of the foreign student who has just begun his study of English is probably at its period of greatest change. The changing proficiency in English of foreign students during this period, and the vast individual differences in potential improvement (dependent upon intelligence, similarity between native language and English, experiences in the United States with English-speaking people, etc.) would tend to lower the validity coefficients between EEFS scores and final grades in English. Thus, despite such limitations, the validity coefficients between EEFS scores and final grades seem satisfactory. (1)

GRADE DISTRIBUTION IN ENGLISH COURSES FOR STUDENTS SCORING ABOVE, WITHIN AND BELOW ESTABLISHED CUT-OFF SCORES ON THE EEFS

The final grade distributions for students with EEFS scores within and outside the established range for each course are presented in Table 2.

In general, the final grade distribution for students within the established EEFS cut-off scores ranges from A to F: the largest proportion receive B's, and considerably fewer get A's and C's. D's and F's vary from none to nine per cent for the different courses. The exception is the first course: G.S. English eV1, in which seventy-eight per cent of the students receive A's and the others B's.

For students with EEFS scores above the established upper limit for the particular course to which they were assigned, the general tendency is for a majority of students to receive A's with relatively few receiving C's. Only G.S. English eV3, the first intermediate course, is an exception to this pattern with twenty-three per cent of

TABLE 2.—THE ENGLISH EXAMINATION FOR FOREIGN STUDENTS: THE RELATION BETWEEN ESTABLISHED CUT-OFF SCORE RANGES AND FINAL GRADE FOR SPECIFIED COURSES: FOR ALL SCORES

Course	EEFS Score Range	No. of Students	Final Grade Distribution in Per Cent			
			A	B	C	D and F
eV1	41–99	19	78	22	—	—
	0–40*	44	43	39	14	4
eV3	56–85	36	31	47	17	6
	41–55*	27	11	74	11	4
	11–40	13	—	31	46	23
eV4	71–90	2	100	—	—	—
	56–70*	16	25	63	12	—
	31–55	16	6	38	50	6
V9	91–110	12	50	42	8	—
	71–90*	64	19	45	31	5
	26–70	34	15	38	35	12
A3	91–115*	58	16	53	22	9
	46–90	33	3	36	48	12

* Established cut-off scores for the course.

the students with placement test scores above the established cut-off limit receiving grades of C or lower. This suggests that a revision of the cut-off points for this course may be needed.[2]

For students with EEFS scores below the established lower limit for the particular course to which they were assigned, the general tendency is for the majority of students in each course to receive grades of C or lower. There are very few A's received by this group, and the per cent of B's is usually lower than the per cent of C's.

These grade distributions indicate the value of the *English Examination for Foreign Students* in the placement of students at the appropriate level in English. The grade distribution for students with EEFS scores within the established range is satisfactory; for students with scores above the established range tends to be limited toward the upper end of the grade range; and for students with scores below the established range tends to be limited toward the lower end of the grade range.

[2] Such a modification has been made.

SUMMARY AND CONCLUSIONS

The validity of an *English Examination for Foreign Students* was tested against the criterion of final grades in English courses for students assigned on the basis of scores on the English test. Foreign students entering Columbia University are required to take an objective English examination on the basis of which they are placed in one of a hierarchy of five courses in written composition, grammar and reading. Final grade distributions were contrasted for students with placement test scores within and outside the established range for the course.

Obtained correlation between *English Examination for Foreign Students* scores and final grades range from .31 to .65 (corrected for range of ability, .45 to .87) validities compare very favorably with those of other investigators between scores on objective tests with final grades in English courses for native English-speaking students (*1*).

The final grade distribution for students with placement test scores within the established range for the course tend to be distributed over the grade range, with the largest per cent of students receiving B's and fewer receiving A's and C's. For students with placement test scores above the established limits, final grades bunched at the upper end with most students receiving A's; for those with placement test scores below the established limits, grades bunched at the lower end of the grade distribution with most students receiving C's and a considerable number receiving F's.

The data suggest that the *English Examination for Foreign Students* is a useful and valid measure for placement of foreign students in English courses appropriate to their measured mastery of English.

BIBLIOGRAPHY

1) Edith M. Huddleston. *Measurement of Writing Ability at the College-Entrance Level: Objective vs. Subjective Testing Techniques.* Princeton: N. J. Educational Testing Service, 1952.

2) Irving Lorge and Lorraine K. Diamond. "The Proficiency in the English Language of Foreign Students with Different Linguistic Backgrounds" (in press).

3) Herbert Schueler. "English for foreign students." *J. Higher Education*, 20, 309–316, 1949.

MOTIVATIONAL DIFFERENCES BETWEEN HIGH AND LOW SCHOLARSHIP COLLEGE STUDENTS

WILLIAM F. BROWN, NORMAN ABELES and IRA ISCOE

The University of Texas

A survey of the literature concerned with the study of factors influencing student success and failure in college discloses a variety of investigations (*1, 3, 5, 7, 8, 9, 10, 12*). Studies utilizing interview techniques have revealed many personality differences between good and poor students. Tiebout (*10*), in his three-year clinical study of students at Sarah Lawrence College, found great similarities in the behavioral patterns of girls whose scholastic records were lower than intelligence test scores would predict. He concluded that his study pointed to the existence of a behavior syndrome which might be characterized as follows: (A) A need to rely upon strong and immediate motivations to begin studying; (B) A tendency to possess interests of a transitory, impermanent nature; (C) A tendency to be governed by strong hedonistic principles; and (D) A deep-seated problem in learning.

Many of the studies concerned with this problem of differences between high-scholarship and low-scholarship students have utilized the questionnaire method. Several of these reports (*1, 2, 3, 5, 8, 9, 11*) seem to substantiate the hypothesis that existing study habits or questionnaires do not adequately distinguish good from poor students. Brooks and Heston (*1*) in a study concerned with the validity of items in a study habits inventory found that the questionnaire scores correlated .18 with cumulative grade averages and .07 with ACE scores. Their sample was composed of two hundred and seventy-six college students. Of the total seventy-five items on the questionnaire, twenty-eight items were found to be significant.

Eurich (*3*) prepared a 100-item study habits questionnaire which he administered to one hundred and twenty-one students enrolled in a beginning course in educational psychology. The correlation between questionnaire scores and final examination grades was −.20 for the one hundred and twenty-one students. Other studies

(*2, 5, 8, 9, 11*) utilizing the questionnaire method for ascertaining the study habits of high- and low-scholarship students have reported similar results.

An analysis of the items on the various questionnaires seems to indicate that the items were concerned mostly with specific study techniques rather than underlying motivational differences. The studies to be presented here were designed to investigate motivational differences in terms of conformance with academic requirements and the willingness to take decisive actions. Three separate studies, each concerned with a different phase of this problem, will be discussed. We shall name them as follows: The first, or Preliminary Study; the second, or Student Attitude Questionnaire; and the third, or Classroom Study. Each of these revolves around the attendance of students at these studies. In the case of the Preliminary Study a sample of college students was asked to participate in a graduate student's research project. In the Student Attitude Questionnaire, a sample of college students was asked to attend sessions at which a questionnaire was to be administered under the auspices of Cornell University. The Classroom Study concerned a group of students taking a beginning course in educational psychology who were given the chance for additional help with their course work. This, then, briefly differentiates the three studies.

METHOD AND RESULTS

A) The Preliminary Study: Method.—The sample consisted of one hundred and forty-three second-semester freshman students, both men and women enrolled in the College of Arts and Sciences at the University of Texas. Ninety-seven students from the Dean's Honor List and forty-six students from the Scholastic Probation List were selected chiefly because they had comparable scores on the ACE (1941 Edition). The one hundred and forty-three students selected represented all the students from each list whose ACE total scores fell within certain selected limits. The upper limit (139) was based upon the highest score made by a freshman on scholastic probation and the lower limit (65) was based upon the lowest score made by a freshman on the Dean's Honor List. The difference between the means of ACE scores made by the ninety-seven students on the Dean's Honor List and the forty-six students on Scholastic Probation was not significant.

The one hundred and forty-three freshmen thus selected were

sent letters requesting that they report to one of the regular testing rooms in the Department of Psychology to coöperate in a psychological study designed to investigate sex differences in study habits. It was emphasized that the students had been randomly selected from the freshman class. They were told in the letter that the study would take about one hour and that they could come in any time during a designated three-day period to take the questionnaire. Stress was placed on the need for all subjects to appear so that the sampling design would be complete. After the initial three-day period, those who had not appeared were sent a second letter reëmphasizing the importance of their coöperation. The remaining students who had not appeared after receiving the letter for the second session were individually phoned and definite appointments were made with these students to appear at a specified time.

RESULTS: PRELIMINARY STUDY

The findings of this study are indicated in Table 1. We note that practically all of the Dean's Honor List students attended one of the sessions, while only half of the students on scholastic probation did so. Of the three students on the Dean's Honor List who did not attend, one was in the hospital and two asked if attendance was compulsory. When told that they would not be forced to appear they stated that they would be too busy to attend. Of the non-attending students on scholastic probation, only one admitted having received the two letters (i.e., when contacted over the phone) despite the fact that none of the letters were returned by the Post Office. All of the Probation List students who failed to appear had been contacted three times by phone and had made three separate appointments to appear. It is also interesting to point out that more

TABLE 1.—ATTENDANCE OF HIGH- AND LOW-SCHOLARSHIP FRESHMEN AT PRELIMINARY STUDY

Scholarship Group	Number of Students	Per Cent Attending after First Letter	Per Cent Attending after Second Letter	Per Cent Attending after Phoning	Total Per Cent Attending
Dean's List	97	80% (78)*	15% (14)	2% (2)**	97% (94)
Probation List	46	13% (6)	15% (7)	22% (10)	50% (23)

* Figures in brackets refer to actual number of students attending.

** This low percentage should be considered in the light of ninety-five per cent of the Dean's list having already taken the questionnaire.

than three-fourths of the Dean's Honor List students appeared at the first session, while only a little more than one-eighth of the scholastic probation group appeared at this session. Furthermore, the largest number of the low-scholarship students to appear did so only after phone contact.

B) The Student Attitude Questionnaire: Method.—This study took place in April, 1952, when the University of Texas was asked to coöperate with ten other universities in a study of student attitudes concerning the draft, the Korean War, college life, vocational aspirations, religious ideas, government and politics, etc. Accordingly, an alphabetical roster of all undergraduate male students at the University of Texas was prepared and every seventh student was sent a letter signed by the President of the University. This letter asked that the student attend any one of the twelve sessions scheduled during a specified two-day period. The student was informed of the nature of the questionnaire and also that he had been randomly selected. Coöperation was strongly urged as well as the fact that other universities were participating in this project so that the results would reflect upon his school. In general the letter was so worded as to make the student feel privileged to participate, rather than making this seem like a distasteful task that had to be done.

After the first session the procedure was similar to that used in the previous design. A second, more strongly worded, letter was sent which 'ordered' the student 'to report' to any one of four specified testing sessions. The students who had not appeared at the second session were individually contacted at least once over the phone and appointments were made with them to attend special testing sessions. A point was made to talk with the individual student concerned in addition to leaving messages with his roommate, landlady or housemother. This study, then, comprises a total of three hundred and sixty-seven students; namely, those who attended the first sessions (two hundred and twenty) and those who were contacted by individual phone calls, whether they eventually attended one of the sessions or not (one hundred and forty-seven). For the purpose of comparison in this study, the students who attended one of the session in response to the second letter, as well as those who in one way or another could not be contacted (i.e., moved, drafted, sick) were eliminated.

A brief listing of the categories may simplify the situation:

	Number	
Total number of letters sent to original sample*	660	
Students attending first scheduled sessions (first letter)	220	Group A
Students attending second scheduled session (second letter)	243	Group B
Students attending third scheduled session (phone contact)	81	Group C
Students contacted (phoned) but not appearing	66	Group D
Students eliminated from study (withdrew, ill, etc.)	53	Group X

* Record of attendance was available in that each questionnaire booklet contained an attendance slip. Upon completing the questionnaire a student wrote his name on the slip and turned it in separately. By noting the session attended a record was thus available while the anonymity of the students' answers was preserved.

Thus, to recapitulate, a comparison between groups A and CD (combined) was carried out in terms of grade-point averages. These were computed on the basis of A = 4, B = 3, C = 2, D = 1 and F = 0. This information was taken directly from the records in the Registrar's Office.

RESULTS: STUDENT ATTITUDE QUESTIONNAIRE

The findings of this study may be found in Table 2. A chi-square analysis was carried out and indicated a difference between Group A and Groups C and D which was significant at the .001 level ($X^2 = 17.38$, d.f. = 3). We may note, therefore, that the students appearing promptly after receiving their first letter had significantly higher grade averages than those who had to receive two

TABLE 2.—GRADE POINT AVERAGES OF STUDENTS APPEARING PROMPTLY VERSUS LATE APPEARING AND NON-APPEARING STUDENTS

Grade-Point Averages	Number of Students Group A	Number of Students Groups C and D	Total
3.00–3.99	60	17	77
2.00–2.99	99	65	164
1.00–1.99	49	53	102
0.00–0.99	12	12	24
Total	220	147	367

letters and at least one phone call. If a division is made at a cutting point of above and below a 2.00 point grade average (roughly a C average) the following breakdown results:

Grade-point Average	Group A	Groups C and D	Total
2.00 and above	159	82	241
Below 2.00	61	65	126
Total	220	147	367

The chi-square analysis is significant at the one per cent level of confidence ($X^2 = 9.99$, d.f. = 1). The distribution of frequencies reveals that, for the group considered, the higher scholarship students are more willing to at least comply with requests from the university authorities than low-grade-point students.

C) The Classroom Study: Method.—The sample of this study was composed of students in two sections of an elementary educational psychology course and consisted of eighty male and female students. They were told at the beginning of the term that one of their three examinations that semester would be taken directly from the true-false and multiple-choice questions found in their workbook. Three weeks before the examination the students were told that they could check their workbook answers with a set of answer keys constructed by the instructor. They were thus given the chance to get the correct answers to the five hundred and twenty-three questions in the workbook. The test, was to consist of one hundred of the five hundred and twenty-three questions in the workbook. The instructor stipulated that they could come any time during a two-week period to look at the keys provided they had completed their workbook exercises. The instructor frankly admitted that the students could pretend they had answered the workbook questions by haphazardly filling in pluses and minuses and numbers although he emphasized that this would not help them study for the examination. He also admitted that some students could copy the 'key' answers from another student who had done the work and looked at the keys. Furthermore, it was not compulsory to look at the instructor's key, for this was to help the student prepare for the workbook examination, and, therefore, it was optional with the student whether he wanted to appear or not. The instructor kept track of

TABLE 3.—TEST SCORES OF STUDENTS USING THE SCORING KEY AS COMPARED TO THOSE NOT USING KEY

Scores on Test	Number of Students Using Key	Number of Students Not Using Key	Total
91–100	25	6	31
81–90	11	8	19
80 and below	9	18	27
Total	45	32	77

the students using the key by having them sign their names as they looked at the key in an adjoining office.

RESULTS: CLASSROOM STUDY

The results are shown in Table 3. We note that of the seventy-seven students taking the test, forty-five made use of the key while thirty-two did not do so officially—that is they did not come and sign out for the key. The extent that those not using the key actually looked at someone else's corrected exercises is a matter for speculation.

In comparing the two groups, a chi-square analysis was made again and the difference between the two groups was found to be significant at the .01 level ($X^2 = 13.301$, d.f. = 2). The results are of course fairly obvious by inspection. There were twice as many students scoring below 80 who did not make use of the key as those who did. And of those who scored above 90 there were more than four times as many who used the key as those who did not.

DISCUSSION: THE THREE STUDIES COMBINED

What are the implications of the findings of the three studies presented? It has been known for a long time that intelligence in itself is not the only factor decisive for high or low scholarship. What, then, are some of the characteristics of the poor student? Above all, there seems to be what we shall call here 'activity delay', that is, a lack of decisiveness of action, a tendency to procrastinate, perhaps an unwillingness to conform to academic (and possibly other) requirements, routine and regulations. Whether this is merely a lack of interest, or whether there is overt interest (as is often expressed by students) which is not backed up by the activi-

ties to accompany this interest, only further research will tell. This study seems to indicate that 'activity delay' carries on beyond the classroom. Certainly most students express interest in having their attitudes 'tested'. Particularly when a whole undergraduate school is sampled it seems especially significant that the poorer students either failed to attend or did not attend until they had received two letters and one phone call. It might be argued that these students are attempting to keep up with their work and thus do not have time to attend 'attitude tests'. Yet, this is not consistent with the findings in the classroom. Even when given a chance the poorer student does not take advantage of study aids. The results of the three studies cited would emphasize that the student's attitude towards academic life may be as important (or even more so) than specific study habits, study aids, tutorial possibilities or native intelligence. Further studies are needed in order to ascertain whether these factors carry on into other areas of student life, such as participation in social and athletic activities. Related to the above is the question of what was the underlying motivation in attending college in the first place. One aspect of this process; namely, prestige in terms of membership in select groups, is now being studied by the present authors. The question can then properly be raised as to the effect of activity delay on social group activities.

SUMMARY

A series of three studies were reported concerned with the motivational differences between high-and low-scholarship students in college. The following findings were postulated:

1) The poor college student is characterized by 'activity delay', i.e., a lack of decisiveness of action, a tendency to procrastinate and perhaps an unwillingness to conform to academic requirements, routine and regulations.

2) This activity delay is not limited to the classroom only but exhibits itself in regard to activities usually regarded as outside the classroom sphere such as voluntary participation in research studies in psychology and university-wide projects such as attitude surveys.

3) This study pointed toward the assumption that the poor-scholarship student does not necessarily score lower on psychological tests designed to measure intelligence, but that very often

factors of interest and motivation are primary contributors towards low scholarship.

This study further raised the question whether activity delay carries over into other aspects of student life and indicated that research was in progress to study this area.

REFERENCES

1) F. D. Brooks and J. C. Heston. "The validity of items in a study habits inventory," *J. Educ. Psychol.*, 1945, 36, 257–270.

2) N. B. Cuff. "Study habits in grades four to twelve," *J. Educ. Psychol.*, 1937, 28, 295–301.

3) A. C. Eurich. "An analysis of self-ratings on studiousness traits," *J. Appl. Psychol.*, 1940, 24, 493–504.

4) P. O. Johnson. *Statistical Methods in Research*, New York: Prentice Hall, 1949.

5) N. M. Locke. "The student skills inventory: a study habits test," *J. Appl. Psychol.*, 1940, 24, 493–504.

6) Q. McNemar. *Psychological Statistics*, New York: John Wiley & Sons, 1949.

7) L. C. Pressey. "What are the crucial differences between good and poor students?" In S. L. Pressey (Ed.) *Research Adventures in University Teaching*, Bloomington: Public School Publishing Co., 1927, pp. 4–10.

8) C. W. Reeder. "Study habits," *Sch. and Soc.*, 1935, 42, 413–415.

9) G. M. Schlesser and C. W. Young. "Study and work habits," *Sch. Rev.*, 1945, 53, 85–89.

10) H. M. Tiebout. "The misnamed lazy student," *Educ. Rec.*, 1943, 24, 113–129.

11) A. E. Traxler. "Some results of an experimental survey of the study habits of independent-school pupils," *Educ. Rec. Bull.*, 1945, No. 42, 40–49.

12) C. G. Wrenn and W. J. Humber. "Study habits associated with high- and low-scholarship," *J. Educ. Psychol.*, 1941, 32, 611–616.

THE PROBLEM-ORIENTED APPROACH TO TEACHING PSYCHOLOGY

W. J. McKEACHIE and WESLEY HILER

University of Michigan

How can students comprehend and retain more of their textbook material? Many students who take a course involving concepts unfamiliar to them have considerable difficulty in gaining a concrete understanding of the material presented in their textbook. They read along passively and feel that they understand what they are reading but when examined on it, they discover how little they have mastered. We cannot attribute this difficulty merely to poor study habits, for many of the students who do poorly in a new subject are doing well in other fields with which they are more familiar.

We feel that the basic problem in these cases is the lack of an adequate frame of reference with which to organize and assimilate the various concepts, principles, and facts which are found in the textbook. Learning is easiest when it consists of filling the gaps in a "generalized knowledge of the whole."[1] Every subject matter, be it science, literature, or the arts, is an organized body of knowledge, not a mere array of isolated facts; hence a knowledge of this subject matter should be an organized structure within the student's mind. Expectations, questions, and problems are intrinsic to all such organized structures. These represent the gaps. Material which answers questions implicit or inherent in an organized knowledge of a subject matter is learned with little effort. This is in contrast to the extremely laborious and energy consuming process of rote memorizing.

On the basis of this theory, how can we help those who have no frame of reference which can be used to facilitate learning of new material, and who do not even know how to distinguish the essential points from illustrative details? If we are not to resort to rote memory and all its disadvantages, we must artificially construct a 'demand structure' in the student's mind which the facts to be learned will satisfy. This can be done by proposing a problem or

[1] This conception of learning is as old as Herbart, but has been further developed by the Gestalt psychologists.

asking a question for which the person must actively seek the answer. Preferably the problem should be meaningful to the individual and capable of arousing a genuine interest on his part. If we can induce our students to become 'problem-oriented' towards their subject matter, they will learn it more easily.

Hulsey Cason has reported the use of a work sheet system which he calls the 'intelligent question' method in teaching elementary psychology and reports great success (*3*). He believes that the essential thing to be learned in psychology is the psychologist's particular way of dealing with problems. Students must have an opportunity to gain practice in the use of psychological concepts and examinations must test this ability. "The students should know what kind of psychological processes will be valued and credited on the examinations, and they should be given every possible opportunity and aid in deliberately cultivating these psychological processes in their work for the course" (*3*, p. 363).

This procedure is recommended by Cason: "The instructor makes out the kind of questions that he desires for each topic. The answers to these questions include everything the students are asked to learn from the lectures, reading, class discussion and from any and all other sources. The one hundred or one hundred and fifty questions on the subject matter of the whole course are given to the students in advance" (*3*, p. 367). In this fashion the student will know what he needs to know while he is reading the text or listening to a lecture. The questions used on the examinations are derived from this list but are not identical in form.

Unfortunately Cason presents no experimental evidence in support of his method, so we are forced to generalize from the favorable results obtained with work books in high-school courses reported by Anderson (*1*), Harrington and Lippert (*6*) and Hurd (*7*).

An experimental study dealing with the use of work sheets is reported by Greene (*4*). He found on both immediate testing and testing after from one to four weeks that the results of 'guided reading' (consisting in answering true-false questions on a work sheet while reading) were very superior to either unguided reading or the lecture.

Motivational conditions in Greene's experiment, however, may have differed from those in an ordinary classroom situation. A further disadvantage is that Greene's criterion was completely contaminated, for he merely used the examination sheets for work

sheets. This procedure is somewhat similar to that of improving one's 'intelligence' by studying intelligence test manuals. Furthermore, one cannot be certain that the over-all knowledge of the guided reading group was superior to the other groups. It might be that in learning more thoroughly the material to be tested on the examination the students learned less of the other important material covered by the text but not tested.

In order to gain information concerning the value of study questions for an elementary psychology course in an actual classroom situation using items on the criterion test which are different from the study questions, the following Experiment 1 was conducted.

EXPERIMENT I

The study was carried out with three hundred and sixty students of elementary psychology at the University of Michigan. These students all used the same textbook and attended the same lectures. They had been enrolled on the basis of student choice of hour in eleven discussion sections, conducted by advanced graduate students. These discussion sections met for one two-hour period. In addition the students spent two hours a week in large lecture sections.

Seven discussion sections were given a work sheet containing seventy-five short answer questions and problems covering the textbook[2] material on sensation and perception paralleling the sequence of topics in the text. Four of these sections, which we shall call Group A, were not required to work out the work sheet and turn it in. The other three sections, which we call Group B, were required to work out and turn in the work sheet. The work sheets were then corrected and returned to the students. No students were discarded from Group B because of failure to do the work. As it turned out, this experimental group contains eighteen students who did not actually work out the work sheet. The remaining four sections, Group C, did not receive a work sheet.

Sections were assigned to these three groups in such a way that the three groups were as nearly equal as possible as measured by performance on the mid-term examination. Of the four instructors involved, three taught three sections each, and each of the three sections received a different treatment, while the fourth instructor

[2] The textbook used was Woodworth and Marquis' *Psychology*.

taught only two sections which were assigned by chance to conditions A and C.

The regular final examination (multiple-choice type) which had been prepared independently of the questions used on the work sheets served as a criterion for measuring the effectiveness of the work sheets. As it turned out only four questions on the examination covered the textbook material on perception and sensation and no examination questions were identical to those on the work sheet.

Each student in the two experimental groups was matched with a student in the control group on the basis of his score on the final examination as a whole.[3] This was done by matching as many identical scores as possible and then matching scores with a difference up to 3 in such a way that the total score for each experimental group was identical to the total of the control group. Thus the means of the groups to be compared were perfectly matched. Since some cases could not be matched with any in the control group, we have an N of 87 pairs in the matching of Group B with C and an N of 111 pairs in the matching of A with C.

The number of errors each student made on the perception and sensation questions was then tabulated and the difference between pairs was obtained.

RESULTS OF EXPERIMENT 1

The mean and standard deviation of the distribution of differences of scores on the perception items was calculated, and the mean difference between the pairs was tested for significance. The difference between the group which had been given the work sheet but not required to do it and turn it in (Group A), and the control group proved to be insignificant. However the difference between the control group and the group which had been given the work sheet with instructions to work it out and turn it in (Group B) proved to be highly significant. The control group made forty-two per cent more errors on perception and sensation than did experimental Group B. See Table I.

We may tentatively conclude that under the circumstances of

[3] Since only four questions out of one hundred and twenty dealt with sensation and perception, it was not necessary to subtract the score on these items from the total score in matching the groups. Our procedure would tend to diminish the significance level, but only slightly.

TABLE I.—ERRORS ON PERCEPTION ITEMS ON FINAL EXAMINATION

	Mean	Standard Deviation of Differences	N	P
Group A matched with Group C	1.063 1.252	1.16	111	.085
Group B matched with Group C	0.839 1.195	.98	87	.01

this study the use of work sheets was effective and that the group of students required to work them out was superior in the retention and comprehension of the textbook material as tested by final examination to students who had not used work sheets. Our original hypothesis about the effectiveness of work sheets has been confirmed.

STUDENT OPINION ON THE USE OF WORK SHEETS

In order to see what the students who had been given the work sheets felt about their value, a questionnaire was handed out to one of the sections which had filled out and turned in a twenty-question work sheet.

Out of the twenty students (all of the members of the class) who answered and returned the questionnaire, eighteen expressed approval of the general idea whereas two were opposed to it.

Some typical comments made by the students were as follows:

"I think they greatly aid study and help the student pick out the important points."

"These sheets definitely help in giving a clearer understanding of the textbook."

"Work sheets are an excellent idea, if they are not to be corrected, since they indicate what material is to be concentrated upon. To know what parts of the text are important (which is often difficult to determine) would bring the whole course into a clearer and better perspective."

Thus in spite of the additional work required by the use of work sheets, many students reacted favorably towards them.

EXPERIMENT 2

At the conclusion of Experiment 1, we still were left with two questions about the use of study questions.

1) Had the study questions been effective simply because they motivated the students to spend more time in studying the general area covered by the questions?

2) Is the increased learning produced by study questions gained at the expense of material not covered by the questions?

To answer these questions another experiment was carried out in which study time was controlled by giving study questions during a class period. Students spent one class period studying the topic 'Problem-solving' using thirteen study questions provided for them. A control group was instructed to spend the class period in studying the same material, but was given no study questions. The questions used on the work sheet were of the 'short answer' type, i.e., they could be answered in one or two sentences.

During the last ten minutes of the class period, the students were given a criterion test made up of ten multiple-choice items. The questions on this criterion test were constructed to fall into two categories: (1) those questions directly related to a study question (covering the same material but different in structure), and (2) those questions not based on the study questions.

RESULTS OF EXPERIMENT 2

The results of Experiment 2 showed that the students who had been given study questions did make higher scores than the control group on the items directly related to the questions. This higher score was not gained at the expense of areas not covered by the

TABLE II.—ERRORS ON CRITERION TEST

	Group Using Study Questions			Control Group			
	M	SD	N	M	SD	N	p
Questions directly related to study questions. Total possible—5.	1.9	1.2	95	2.5	1.0	85	.01
Questions not based on study questions. Total possible—5.	1.8	1.15		1.8	1.27		

questions, for scores on items not based on the study questions did not differ for the two groups. See Table II.

DISCUSSION AND CONCLUSIONS

On the basis of the evidence at hand, we conclude that work sheets are effective in improving performance on examinations. We have discussed the theoretical basis for this effectiveness in our introduction, but our experiments and the reports obtained from the students enable us to become more specific.

Work sheets help the student in the process of selection. Faced with a mass of facts, he needs to know which facts or units of material are most important. With a work sheet he can emphasize these facts in his study. Our evidence indicates that the selection of important facts does not interfere with the learning of material not selected for study questions. In addition, study questions can provide a means whereby the student can organize the vast array of facts and concepts into a unified framework which facilitates subsequent learning. The questions provide a framework into which the student can fit unfamiliar subject matter. By helping him find the logical inter-relationships between facts and principles, they may aid him in categorizing and unitizing the subject matter. Our students reported that in addition to their selective function, the work sheets give a clearer understanding of the textbook and bring the whole course into perspective.

Our theory of the function of study questions possesses certain implications for the construction of such questions.

1) Questions should be designed which require the student to see the implications of a fact, to relate it to other facts and to draw inferences. We would expect a question requiring only rote memory of a specific fact to be of little value in organization.

2) No question should be asked which requires a more complete frame of reference to answer intelligently than is possessed by the beginner in a new field. The questions should be capable of being answered correctly on the basis of the material available to the student. We would guess that a too difficult question would be likely to cause the student to distort his cognitive organization of the material in order to get some sort of answer.

3) No question should be asked which can be answered by a mere quotation from the book. The most effective type of ques-

tion is probably one which presents a concrete situation or problem and asks the student to interpret or solve it on the basis of certain concepts or principles. This sort of question, we believe, forces the student to look for relationships.

4) One problem which has not been touched upon is the optimal number of questions to be used for any given amount or type of subject matter. If there are too few questions, not enough of the subject matter will be covered. If there are too many questions, the factor of 'mental dazzle' (*9*) will enter into the picture. If there are a great number of questions and a great many new concepts, the learner will be 'dazzled' and learning will be inefficient. We would guess that the optimal number of questions would vary with the number of new concepts in the material and with the learner's familiarity with the material.

SUMMARY

1) On the basis of the theory of learning presented, a problem-oriented method was recommended for use in introductory courses.

2) Two experiments were undertaken to obtain evidence of the effectiveness of work sheets in an elementary psychology course.

3) The results proved highly significant in favor of the group using the work sheets.

4) A survey of student opinion indicated a favorable attitude towards the use of work sheet assignments.

5) Results of the experiments are interpreted in terms of value of study questions in selecting and organizing important principles.

REFERENCES

1) F. C. Anderson. *An Experiment To Determine the Effect of a Work Book on Achievement in General Science* (unpublished). Abstract in *Rev. Educ. Res.*, 1942, 12, 383.

2) H. K. Bennett. *The Iowa Plan for Directed Study through Work Type Reading.* Iowa State Department of Public Instruction, 1939.

3) H. Cason. "An intelligent-question method of teaching and testing." *J. Genet. Psychol.*, 1939, 54, 359–390.

4) E. B. Greene. "Certain aspects of lecture, reading and guided reading." *Sch. & Soc.*, 1934, 39, 619–624.

5) T. V. Goodrich. "Is the work book a necessity or a luxury?" *Sch. Exec.*, 1931, 50, 359–361.

6) E. E. Harrington and D. E. Lippert. "The work book." *Penn. Sch. J.*, 1934, 82, 359–362.

7) A. W. Hurd. "The work book as an instructional aid." *Sch. Rev.*, 1931, 39, 610–616.

8) G. Katona. *Organizing and Memorizing.* New York: Columbia Univ. Press, 1940.

9) D. Katz. *Gesalt Psychology.* New York: Ronald Press, 1950.

10) R. M. Tryon. "The development and appraisal of work books in the social sciences." *Sch. Rev.*, 1938, 46, 17–31.

HOW STUDENT-TEACHERS IDENTIFY RESPONSIBILITY IN CHILDREN

DALE B. HARRIS

Institute of Child Welfare, University of Minnesota

How do teachers define, behaviorally, responsibility and a lack of responsibility in children? To supply an answer to this question, two hundred and fifteen women education students were queried after some four months' experience in practice-teaching. The following paragraph was supplied to each student teacher:

"As a part of a research project in the development of responsibility in children, will you assist us by describing two children with whom you are now acquainted? Among the children you are now teaching, select the one you consider the most responsible and the one you consider least responsible in his or her general relationships to you, to the group or class, and to other children with whom he associates in play. For each child, write a description to show wherein he is responsible or irresponsible. Describe the behavior which has caused you to make your judgment. Just what does he do, which makes you name him as the most responsible or the least responsible child you are now dealing with? Please emphasize behavior incidents; general trait characteristics are useful but not as helpful as specific instances of behavior which you can mention."

When teachers were asked to define 'responsible' and 'least responsible' children, no requirement as to sex of child was mentioned, and, since teachers were unevenly distributed over preschool age groups and through the elementary grades, unequal numbers at different ages were obtained. Two hundred and twelve nominations for 'responsible children' and one hundred and ninety four nominations for 'least responsible' children were collected and examined. Boys and girls appear in a ratio of about three boys to two girls. Table I shows that practice-teachers, themselves females working in the elementary grades, name boys in greater numbers than girls as being 'least responsible'. Among the younger children, girls are consistently more often selected than boys for nomination as 'responsible' children. The difference in proportions of the sexes disappears in the intermediate grades. It could be said, perhaps,

TABLE I.—NUMBERS OF CHILDREN REPORTED BY STUDENT-TEACHERS AS MOST AND LEAST RESPONSIBLE, BY AGE

Age Group	Most Responsible				Least Responsible				Total	
	Boys		Girls		Boys		Girls		N	%
	N	%	N	%	N	%	N	%		
2–3	8	20	13	32	16	39	4	10	41	100
4	3	11	11	41	10	37	3	11	27	100
5	15	24	19	31	22	35	6	10	62	100
6	14	26	17	31	16	29	8	15	55	100
7	5	27	18	40	17	38	5	27	45	100
8	7	21	10	30	9	27	7	21	33	100
9	9	26	7	20	15	43	4	11	35	100
10	13	30	10	23	16	37	4	9	43	100
11	10	36	5	18	11	39	2	7	28	100
12	7	27	6	23	12	46	1	4	26	100
13	3	27	2	18	4	36	2	18	11	100
Totals	94		118		148		46		406	

responsibility can be achieved by either sex, but girls are considerably less likely to be called irresponsible.

An attempt was made to read a number of protocols and to devise a series of categories, under which specific behaviors or behavior elements mentioned by the teachers could be subsumed. This procedure did not give 'reliable' results; i.e., too much inconsistency of classification occurred. Protocols were then read one at a time and each separate characteristic mentioned for the responsible child was marked with red pencil and listed on a large sheet of paper. Where another teacher mentioned the same characteristic in the same or almost identical words, an additional tally was made. This procedure resulted in a great number of specific items, with relatively few multiple entries. The separate items (phrased in precisely or almost precisely the same wording) were then grouped; these phrasings were collected into larger groupings by a team of judges according to agreement on manifest content. All the tallies relating to these groupings were summed and converted into a percentage of the children in that age sample. Examination of these groupings showed certain rather gross dimensions of the behavior thus classified which could be named by the judges. For the charac-

teristics attributed to most responsible children, these dimensions were: conformity, work habits, independence of action and motivation (initiative), social behavior and skill, and general personality and character qualities. A similar set of entries could describe all of the separate groupings of descriptive items for the least responsible children.[1]

An example of the classification may clarify this procedure and illustrate the kinds of entries tabulated:

Conformity.—(a) Can be reasoned with; responds to suggestions; follows instructions, pays attention; listens. (b) Remembers what to do; doesn't need reminding; stays within bounds; seldom needs discipline. Can be depended on; doesn't interrupt, misbehave, run about, talk, etc; well-mannered. (c) Helps keep other children 'in line'; helps other children 'keep in line'. (d) Conforms to specific routines, involving self-help.

Corresponding entries for the least responsible group are: (a) Fails to observe rules and routines; not compliant; will not take suggestions; ignores discipline. (b) Doesn't follow directions; must be reminded; pays no attention. (c) Short attention span; distractible.

Since tabulations were originally under such specific headings, and only later collected into broader categories, it was possible to achieve considerable reliability of judgment in classification. Two judges identifying and tallying the behavior elements for a small sample of protocols achieved about ninety-five per cent agreement. Agreement in collecting these specific entries into broader categories was done by consensus of a team of three.

Not too much significance can be attached to the trends reflected by the age breakdowns in the original tables. It was thought at first that a number of such trends might appear, and indeed some few did appear which will be discussed. However, the tables were noteworthy for the fact that no characteristics appear suddenly or

---

[1] Detailed tables of results referred to in this paper have been deposited as Document number 3974 with the ADI Auxiliary Publications Project, Photoduplication Service, Library of Congress, Washington 25, D. C. A copy may be secured by citing the Document number and by remitting $1.25 for photoprints, or $1.25 for 35 mm. microfilm. Advance payment is required. Make checks or money orders payable to: Chief, Photoduplication Service, Library of Congress.

disappear completely within the age range encompassed in this study.

The responsible child is seen as a conforming child in a good many instances. Conforming to specific routines, and responding to suggestions are mentioned by teachers of pre-school groups, mainly, and reflect the importance attached in early childhood education to self-help, and socialization by learning group routines and by responding to reason and suggestion. A similar form of behavior, noted among older as well as younger children, is described by expressions like: remembers what to do, doesn't need reminding, seldom needs discipline, stays within bounds. The characteristic of helping keep other children in line, or helping children control their own behavior, is more often seen in the child between the ages of five and eight. In general, some aspect of conforming behavior, as illustrated by the phrases above, is mentioned consistently for one-fifth to one-third of the children in any age group.

Work habits are mentioned in most descriptions of responsible children. Doing good, efficient work promptly, finishing work begun, asking for extra work or doing more than is requested assume major importance early in the primary years, being mentioned for three-fifths of 6 and 7-year olds, and about ninety per cent of 8- to 11-year olds. Doing housekeeping chores and being a dependable messenger or room helper are mentioned in about one protocol in four, while putting away toys and materials appears much more frequently in the preschool and early primary years. Undoubtedly, the characteristic of being helpful to teacher is an important factor in the child's being considered responsible.

Teachers recognize independence of action as an indicator of responsibility. The child who will initiate his own activities, work independently or not need supervision, is seen as responsible in one-fourth to one-third of the cases. The qualities of being interested and highly motivated in work is more commonly mentioned after the primary years, possibly because the early enthusiasm of children for school is beginning to wane and the pupil who retains his enthusiasm is particularly appealing to the teacher. This characteristic is mentioned in about one protocol in five by ages ten and eleven.

At a time when educators are devoting a great deal of attention to social behavior and skill, it is not surprising that social-mindedness is mentioned in half or more of the protocols as an aspect of

responsible behavior. Sharing toys and taking turns is more a matter, again, of the preschool group. Contributing ideas to the group discussion, and being ready to discuss assumes increasing importance (from twenty-three per cent at four and five years to eighty-three per cent at twelve and thirteen years) in the elementary school period. Being 'very much a part of the group', fair, good sport, etc. are mentioned in one protocol in every five or six. Holding spécific offices in class appears in one-third to two-thirds of the protocols.

A number of general characteristics were rather frequently mentioned for responsible children which have not been subsumed under the headings already discussed. Although maturity of behavior may be inferred from many of the earlier descriptions, the general terms mature, poised, coöperates, stable, or friendly appears in about one-fifth of the protocols. Occasionally the characteristic of responsibility is associated with being intelligent or bright. Not infrequently such terms as neat, precise, perfectionistic, or very conscientious appear. These terms suggest that some children have achieved a reputation of responsibility with their teachers through characteristics which mental hygienists sometimes consider indicative of emotional difficulty. Children may win their teachers' approval through painstaking, meticulous work at the expense of other interests and activities.

While this study did not attempt to investigate the inter-correlations of specific characteristics, it is clear that several rather different types of behavior are viewed by teachers as characterizing responsibility in children. The child who conforms to routines and teacher's expectations, who does good work and who does it willingly, going beyond the stated requirements, is seen as responsible. The child who may be personally helpful to the teacher by housekeeping chores in the room is also marked as responsible. Teachers, however, do recognize that independence of action and high level motivation may also characterize the responsible child, as may skill in social behavior which is characterized by readiness to discuss and contribute to group meetings and by election to class offices. Probably the most frequently mentioned characteristics have to do with conformity and the quality of the child's work habits; social characteristics come next in frequency of mention.

Characteristics attributed to least responsible children seem to the writer to make a clearer picture. Lack of compliance with

routines is mentioned in about half the protocols. Just as frequent is an indication of poor work habits or unwillingness to do school work. Failure to participate constructively in group activities or being an interfering factor in group activities is also associated with little responsibility (from twenty per cent to fifty per cent of the protocols).

Quite a variety of general personality and character qualities are used to describe the irresponsible child. Relatively few such general qualities were ascribed to the highly responsible child. Such terms as nervous, fidgets, highstrung, immature, unstable, cries, whines, appear in from twenty to forty per cent of the protocols. Specific interpretations of behavior as 'desires attention', 'a show-off', 'distracts others with his behavior' are given for equal proportions of the children. Being careless, forgetful, scatter-brained, unpredictable, impulsive, or losing things mentioned not at all for youngest children, appears in seventeen per cent of the protocols at ages four and five, and rises to thirty-three per cent of ten- and eleven-year olds. Being slow, tardy, or dawdling appears at all ages in between ten and twenty per cent of the protocols. Aggressive and destructive characteristics, toward children or adults, appear rather consistently in one-fifth of the cases, regardless of age, beyond the nursery group. Such characteristics as solitary, unaggressive, unsure of self, not a leader, not liked by others are mentioned in a scattering of protocols at almost every age.

While the picture of the responsible child is generally that of a well-adjusted child, the picture of the less responsible child is even more clearly that of an emotionally and psychologically unadjusted child. He is unhappy, does not get along well with his classmates, with his work, and with life in general.

Is responsibility then a matter of habits or attitudes which may be inculcated in the school program? Do teachers teach responsibility through the giving of tasks and the encouragement of work attitudes? This is possible but the present writer believes that responsibility is more likely a matter of the general level of the child's psychological adjustment which reflects in his functioning as he approaches tasks. The happy child who has some assurance of acceptance by the teacher and by others proves to be responsible. He shows enthusiasm for his work, follow-through on tasks. The unhappy, maladjusted child, perhaps because of his preoccupation with his problems, has little inclination to follow-through on

his work tasks. He is therefore identified as showing little responsibility. Whether giving such a child specific tasks and encouraging him to follow through on them will develop a sense of responsibility, can be debated. If being given the task brings with it a sense of recognition of status which the child needs, his performance, possibly, will be improved. In many cases, however, this assignment of task or being given a 'responsibility' on which he must measure up does not relate to the child's psychological disturbance. He is given one additional assignment to which he cannot marshal a concerted attack. Another in his series of failures is likely to be chalked up against him, thus further confirming the teacher's belief that the child shows very little responsibility. This is another example of the 'vicious circle' effect in the reënforcement of learning.

These descriptions pose a problem of considerable significance for mental hygiene in education. They suggest that responsibility is a correlate of good adjustment and can be achieved by whatever will improve the child's general life adjustment and that responsibility is probably not to be sought as a skill, habit or characteristic in itself.

SUMMARY

Two hundred and fifteen student-teachers supplied behavior descriptions of the most and least responsible children in their classes. While there is some tendency for teachers to nominate more girls than boys as responsible, especially in the preschool and primary age groups, there is a marked tendency for teachers to nominate boys more frequently than girls as least responsible. Responsible children are described as conforming, orderly and mature; they carry through activities and require little supervision; they are resourceful and socially oriented, participate well and help others. Least responsible children are not conforming or compliant; they need help with work or 'prodding'; they bother other children and upset orderly group activities; they appear to their teachers as tense, immature, nervous, irritable, careless, forgetful, aggressive, rebellious, or self-centered. They present a clear picture of poor personality integration and adjustment. Responsibility appears to be an expression of quality of adjustment to demands rather than a trait, habit, or skill in itself.

FALSIFICATION OF INTEREST PATTERNS ON THE KUDER PREFERENCE RECORD

EDWARD J. DURNALL, JR.

Nasson College, Springvale, Maine

Various studies have been conducted to determine whether it is possible to falsify interests on the Kuder Preference Record. The general conclusion appears to be that it is quite simple to achieve a high or a low score in a particular interest area (*1*). This fact has tended to limit the use of the Kuder Preference Record in those situations where a certain interest was required for employment or for admission to an institution or a particular program of instruction. The possibility of falsifying an entire interest pattern, rather than one or two interest areas, has not been adequately explored.

The method of this study was the administration of the Kuder Preference Record-Form BB to a group of students, using the instructions furnished by the author. The inventory was then repeated within one week, with specific instructions to the students to check the items as they believed a person with interest in a certain occupational field would check them. The occupational field selected was that of accountant-auditor, since Kuder has furnished norms for this group (*2*) and since the accountant-auditor profile score may be determined by means of Fisher's discriminant function (*3*). The Otis Quick-Scoring Mental Ability Test-Form C was administered to the group to give some measure of intelligence in relation to the ability to falsify.

The group selected for this experiment was made up of two classes in personnel management at a four-year co-educational, liberal arts college. As the number of women involved was quite small, the analysis was limited to the scores of the seventy-nine men.

RESULTS

1) There is little doubt that it is possible to simulate entire interest patterns of certain occupational fields. Figure 1 presents a graphic comparison of the mean interest profiles of the students on the first testing as compared with those of personnel managers as reported by Kuder (*2*), and Figure 2 presents a graphic comparison

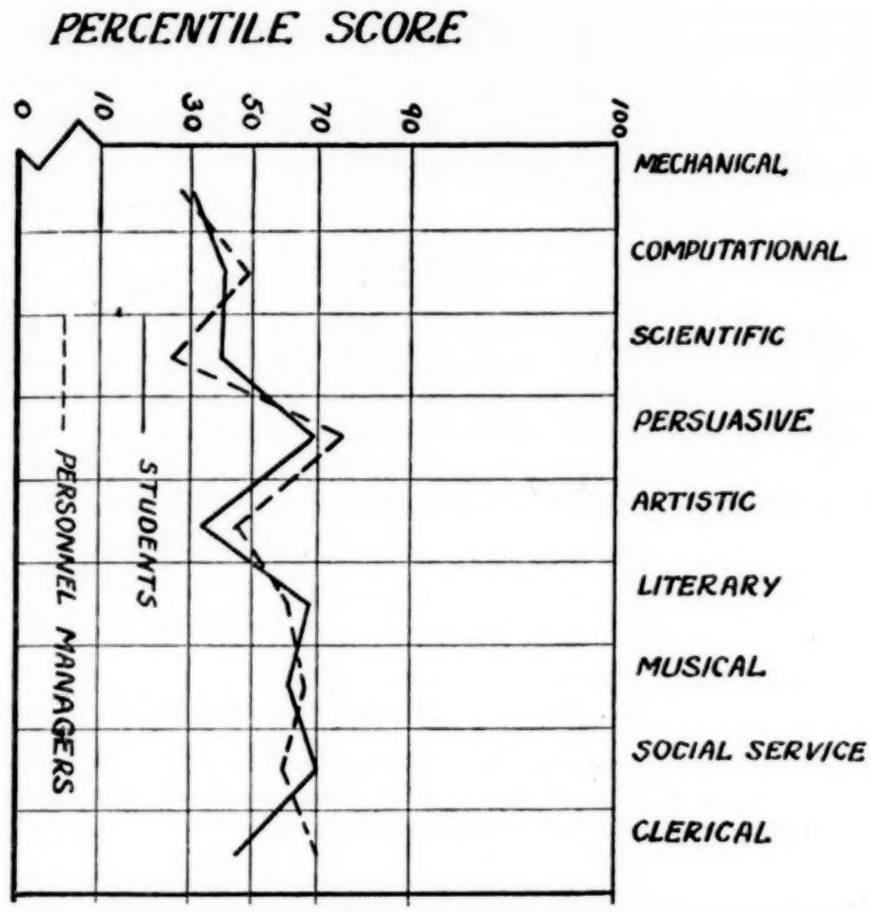

FIG. 1.—Profile of means of students on their first test compared with the Kuder Norms for Personnel Managers.

of the mean interest profiles of the students on the second testing as compared with accountant-auditors as reported by Kuder (*2*). It will be noted that the average true-interest profile of the group was similar to that of personnel managers while, with the simulated scores, the average interest profile of the students was typical of accountant-auditors.

2) The mean accountant-auditor score of the group on the first test was 33.25. On the second or simulated test, the mean was 103.90. The critical ratio between these two scores was 19.14, leaving little possible doubt that the difference was significant.

3) The students with high accountant-auditor scores on the first administration of the Kuder made slightly higher accountant-auditor scores on the second administration than did the students with low accountant-auditor scores. The mean accountant-auditor score of the upper quarter from the first administration was 105.63

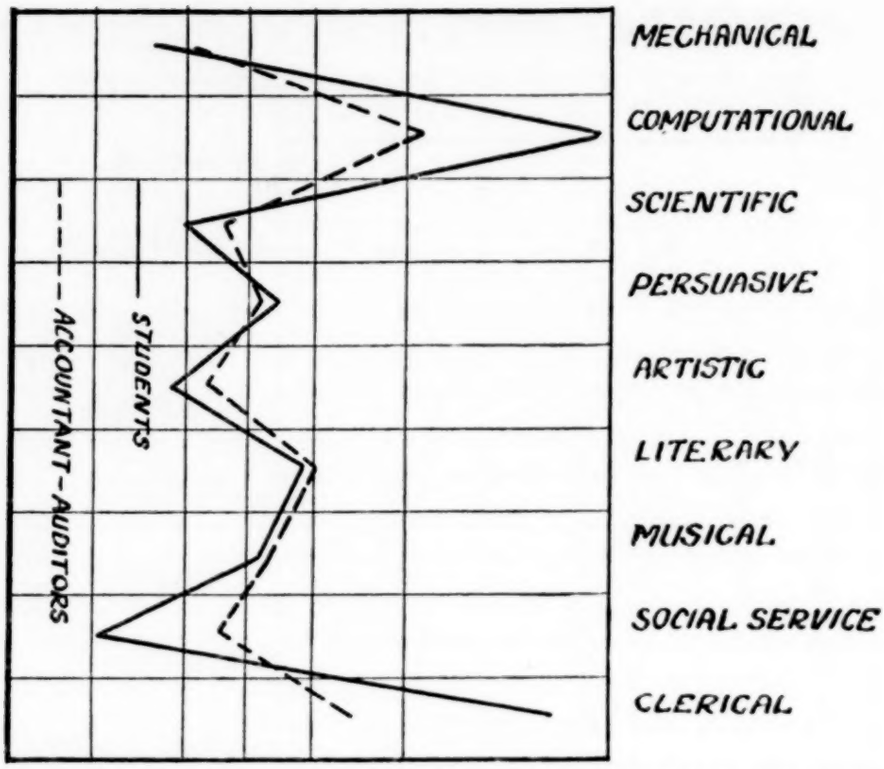

FIG. 2.—Profile of mean of students on their simulated test compared with the Kuder Norms for Accountant Auditors.

on the simulated testing; while that of the lower quarter from the first testing was 98.84 on the second. The critical ratio between these two scores was 1.09.

4) The correlation between the gain in the accountant-auditor score from the first administration to the second administration and the Otis IQ was .39, with a standard error of .09. A similar correlation (.31) was found to exist between the accountant-auditor scores on the simulated test and the Otis IQ scores. The multiple correlation coefficient between Otis IQ scores and true accountant-auditor scores on the one hand and simulated accountant-auditor scores on the other, was .50, with a standard error of .08.

CONCLUSIONS

It seems apparent from this study that it is entirely possible to falsify an entire interest pattern on the Kuder Preference Record. That the ability to do this is related to IQ is shown by scores on the Otis test. It is also related to the true interest patterns of the students, since the student possessing a high Otis IQ and some

interest in the field to be simulated finds it quite simple to achieve high scores on the profile for the occupational field in question.

The use of the Kuder Preference Record in situations which promise to reward a person for showing a certain interest pattern is open to serious question.

REFERENCES

1) Orrin H. Cross. "A study of faking on the Kuder preference record." *Educational and Psychological Measurement*, 10, 271–277, 1950.

2) G. Frederick Kuder. *Revised Manual for the Kuder Preference Record*. Chicago: Science Research Associates, 1946.

3) R. M. W. Travers. "The use of a discriminant function in the treatment of psychological group differences." *Psychometrika*, 4, 25–32, 1939.

THE RELATIONSHIP BETWEEN CLASS ABSENCES AND COLLEGE GRADES

ALEXIS M. ANIKEEFF

Department of Psychology

Oklahoma A. and M. College

For the purpose of developing a sound administrative policy toward college class attendance, an inquiry was initiated to determine the nature of relationships which may exist between class absences and final grades of students enrolled in the School of Business and Industry.

PROCEDURE

At the conclusion of the fall semester, thirty-four faculty members in the School of Business and Industry submitted a roster of 2654 students who were enrolled in their classes. This roster indicated the number of class absences for each student, and the student's final letter grade in the course. Established numerical quality point equivalents of 3, 2, 1, 0, and -1 were substituted for letter grades A, B, C, D, and F, respectively. Students were then placed in categories according to the number of absences which each student accumulated during the semester in each of his courses. Arithmetic means of quality point distributions were next derived for each absence category. In this manner, data became available for plotting class absences on the Y axis and quality point averages on the X axis of scatter diagrams. Linearity of scatter diagrams suggested the computation of Pearsonian product-moment coefficients of correlation.

Moreover, in order to visualize the obtained data from another perspective, students were grouped according to letter grades and the median number of absences for each letter-grade category was computed. This procedure represented more realistically the usual academic routine of assigning grades and recording number of class absences. In addition, the use of medians rather than arithmetic means, reduced the potency of extreme cases. As such, the data conceivably appeared in a more descriptive form.

Inasmuch as the same instructor indicated both the letter grade

and the number of absences for each student, an instructor's proclivity to assign grades which are based in part upon the number of absences accumulated by a student could lead to spuriously high correlations between grades and absences. As a partial measure of the extensiveness of such a practice, each instructor was ranked according to the median number of absences found in his classes. The instructor was again ranked in terms of the arithmetic mean of the quality points which he assigned as final grades to students. Spearman rho as illustrated by Guilford (*2*) was derived to describe the relationship between instructors ranked according to medians of class absences and instructors ranked according to arithmetic means of assigned quality points. Although the obtained correlation may not indicate the specific extent to which each instructor used number of absences as a criterion for determining final class grades, some measure of the over-all tendency for all instructors to do so could be indicated.

RESULTS

Quality points were found to vary inversely with number of absences on all class levels, as Table 1 indicates. The obtained coefficients of correlation range from $-.633$ to $-.962$, and in all cases are significant at either the .05 or .01 levels of confidence. By squaring the r obtained for the four-year breakdown, it is evident that 83 per cent of the class grade variance in this category can be attributed to number of class absences and other related factors, while only 17 per cent of the class grade variance can be attributed to unrelated factors. Using the same procedure, the reader can determine the extent of variance attributed to class absences for the remaining class levels.

Since the number of cases in each absence category decreases as the number of class absences increases, a cut-off point had to be established which would permit the greatest number of points to be plotted on a scatter diagram without sacrificing the stability of each retained point. It was found advisable to exclude from analysis all absence categories which contained less than ten cases. Table 1 indicates the percentage of population used to establish scatter diagram points on each class level after excluding from analysis all absence categories which contained less than ten cases. In this connection, it should be noted that although an absence category may be excluded in one class level breakdown, the previously ex-

TABLE 1.—RELATIONSHIP BETWEEN CLASS ABSENCES AND QUALITY POINTS

Class Levels	Per Cent of Population	N	r	$\bar{r}$
Four Year	99.13	16	−.910**	−.816
Junior-Senior	97.38	12	−.962**	−.918
Freshman-Sophomore	98.89	15	−.936**	−.867
Senior	96.54	9	−.706*	−.426
Junior	95.13	12	−.902**	−.797
Sophomore	97.31	13	−.633*	−.346
Freshman	94.86	11	−.929**	−.848

* −.01 level of confidence.
** −.05 level of confidence.

cluded absence category can be included in the combined class level breakdowns owing to the function of summation. As a consequence, the *r* obtained for the four-year breakdown includes absence categories ranging from no absences to sixteen absences, and excludes less than one per cent of the cases. In Table 1 the double asterisk indicates a .01 level of confidence, while the single asterisk indicates the .05 level. In the same table, obtained *r*'s were corrected for a small number of cases as suggested by Croxton and Cowden (*1*).

In general, for all cases and on all class levels, the median absence is smallest for A grade students and increases progressively for B, C, D, and F grade students. Table 2 illustrates the foregoing statement. It is noteworthy that the median absence of senior and junior level A grade students differs markedly from B

TABLE 2.—MEDIAN NUMBER OF CLASS ABSENCES ACCORDING TO LETTER GRADES

Class Levels	Letter Grades				
	A	B	C	D	F
Four Year	1.82	2.50	3.26	3.85	5.19
Junior-Senior	1.74	3.03	3.51	4.50	5.75
Freshman-Sophomore	1.90	2.02	3.07	3.63	5.04
Senior	1.35	3.00	2.95	5.67	2.00
Junior	2.19	3.06	3.45	4.25	6.00
Sophomore	2.11	2.24	3.38	4.05	5.40
Freshman	1.62	1.63	2.36	3.06	4.78

grade students on the same levels. A similar situation does not appear to hold for freshman and sophomore levels. The apparent inconsistency of the senior F grade student's absence median in Table 2, results from the use of a very small number of unevenly distributed cases.

No significant relationship is found between number of class absences and grading leniency of an instructor. Coefficients of correlation obtained for this comparison range from $-.118$ on the four-year level, through $-.139$ for the junior-senior level, to $-.367$ for the freshman-sophomore level.

DISCUSSION

A statistically significant inverse relationship is found between number of absences and final grades, for all class levels and all combinations of class levels. Although the relationship between faculty grading leniency and number of class absences is both very low and statistically non-significant, the extent to which each faculty member uses number of class absences as a partial criterion for assigning final grades remains unknown. Theoretically, if all faculty members weighted number of class absences as a criterion for assigning grades to the same degree, and if all faculty members used identical systems of grade distributions, strong negative relationships should have been obtained. In brief, instructors who had the greatest number of absences would have issued the lowest grades to their students. Actually, although the obtained coefficients of correlation are negative, these correlation coefficients are neither very strong nor statistically significant.

Another factor which could contribute to the inverse relationship between quality points and class absences, is that of motivation. Lack of motivation could explain the accumulation of a large number of class absences. Moreover, if motivation is wanting, a student expends less effort on his studies and thereby earns lower grades in his course work. As a consequence, whether one measures the number of accumulated class absences or the excellence of a student's grades, the same factor—motivation—may conceivably be measured in both cases. Two measurements of the same factor should correlate highly with each other since both are obviously measures of the same characteristic being compared with itself.

An approximation of the extent to which motivation may contribute to class grades can be secured by relating the factor of motiva-

tion to those factors which well-documented research indicates are related to college grades. Possibly the most documented factor is that of intelligence. Since numerous summaries of the relationships between intelligence tests and grades (*3*) for college students range from .20 to .79, with the modal coefficients ranging from .30 to .50, cognizance must be made of the intelligence factor and its contribution to the grade received by a student. This being the case, the factor of motivation can only contribute that portion to the class grade which has not already been contributed by intelligence and other factors. In order to support the assumption that the factor of motivation can account for the high coefficients of correlation which are obtained between number of class absences and honor point averages, the results obtained in this study must be reconciled with results obtained and documented in other studies. Assuming an absence of overlapping in correlations between intelligence and motivation, as well as an absence of correlation between class absences and intelligence, results obtained in this study would permit a range of correlation coefficients from .27 to .77 to exist between intelligence and class grades. Such a range of correlation coefficients approaches rather closely the previously indicated range of summaries of relationships between intelligence and college grades. Consequently, the assumption that motivation of a student can account for the high correlations found between number of class absences and honor point averages is not inimical to results obtained in other studies.

The obtained results are obviously peculiar to the sample used and the methods employed in this study. However, to the extent that other studies, using other samples, and employing diverse experimental designs, obtain comparable results, an interesting possibility presents itself. Instead of spending countless hours in the construction, development, administration, reading, and grading of college examinations, an instructor could assign grades according to number of class absences and apparently achieve closely approximate results in most instances.

SUMMARY

Thirty-four college faculty members submitted a roster of 2654 students who were enrolled in their classes. This roster indicated both the number of class absences and the final course grade for each student.

1) After letter grades were transformed into quality point equivalents, Pearsonian coefficients of correlation were derived by placing number of absences on the Y axis and quality point averages on the X axis. The obtained coefficients ranged from −.633 to −.962, and in all cases were significant at either the .05 or .01 levels of confidence.

2) The median number of absences for each letter grade category was derived for all class levels. In general, for all cases and on all class levels, the median number of absences was smallest for A grade students and it increased progressively through letter grades B, C, D, and F.

3) As a partial measure of the prevalency with which instructors may use the number of class absences for the determination of class grades, a Spearman rank order coefficient of correlation was plotted by ranking instructors according to the median number of absences in their classes and the arithmetic mean of the final class grades issued. The coefficients of correlation obtained for this relationship ranged from −.118 to −.367, and none were significantly reliable at traditional levels of confidence.

4) Since the number of accumulated class absences and the earned quality point averages may both have a motivational factor in common, the obtained coefficients of correlation between number of class absences and quality point averages may be spuriously high.

REFERENCES

1) F. E. Croxton and D. J. Cowden. *Applied General Statistics.* New York: Prentice-Hall, 1939.

2) J. P. Guilford. *Fundamental Statistics in Psychology and Education.* (2nd Ed.) New York: McGraw-Hill, 1950.

3) D. E. Super. *Appraising Vocational Fitness.* New York: Harper, 1949.

BOOK REVIEWS

EVERETT L. SHOSTROM AND LAWRENCE M. BRAMMER. *The Dynamics of the Counseling Process.* New York: McGraw-Hill Book Company, Inc., 1952, pp. 213. $3.50.

This volume is a practical rather than theoretical discussion of the counseling process, with particular emphasis on the treatment of educational-vocational problems. The authors herein define counseling as "a purposeful, reciprocal relationship between two people in which one, a trained person, helps the other to change himself or the environment." The stated frame of reference is 'self-adjustive' with the aim of counseling being greater self-direction and self-responsibility. This actually represents the philosophy and techniques of Rogerian client-centered therapy with some minor modifications. The modifications, for the most part, involve recommending greater use of psychological tests and inventories than is usually advocated by Rogers and his students.

The goal of this 'permissive or client-centered approach' is "to facilitate the individual's total maturity as well as focus on his immediate problem-solving processes." Counseling is seen as a situation where the client "may reëvaluate his experiences and so bring the self into closer harmony with experience." The self, in this case, is defined as "the individual's dynamic organization of concepts, values, goals and ideas which determine the ways in which he should behave."

After discussing the self-adjustive approach in terms of Roger's notions of personality and growth, the authors turn their attention to actual counseling procedures. They discuss establishing readiness for counseling, the initial interview, the use of tests and occupational information, and the synthesis (or terminal) interview. The final chapter is a discussion of the application of the client-centered approach to classroom teaching, the organization of courses and their content, and concludes with a client-centered philosophy of education.

Shostrom and Brammer, throughout the text, stress the important problem of dealing with the client's attitudinal and emotional responses to counseling. Their use of pre-counseling group orientation sessions to explain the goals of counseling and to help clients clarify their expectations about counseling seems to be a very use-

ful procedure. The section on interpreting test results to the client is very well done and may provide counselors with several helpful techniques.

The authors strongly advocate the self-adjustive, i.e., client-centered, approach as preferable to the directive approach, the only other alternative discussed. Their reasons for this position are two-fold—ideological and empirical. They believe that "the basic assumptions of democracy and those of client-centered therapy are one and the same." Implicit in this statement is the argument that, if democracy is the best form of government (and who would argue against this point of view), then client-centered treatment is the best form of therapy. Meehl and McClosky in "Ethical and political aspects of applied psychology" (J. abnorm. soc. Psychol., 1947, pp. 91–98) have pointed out the sophistry of this reasoning and called for the use of empirically derived criteria to evaluate the efficacy of the counseling process.

The advocacy of this position by the authors also stems from their participation in the Stanford Guidance Study, a research program which is reported in some detail. This study seemingly used three criterion measures of the effectiveness of counseling: (1) factual information about counseling procedures (the client's ability to differentiate different types of tests; ability to name commonly used tests; etc.), (2) feeling tone (how the client 'feels' about the counseling experience; to be inferred from his verbal statements.), (3) self-direction (the client's attitudes about himself in relation to a counseling experience; to be inferred from verbal statements). The authors claim that the results of the study demonstrated that the group treated by client-centered techniques was 'superior' on the last two criteria to a group counseled by 'more traditional directive techniques'.

One may question the usefulness of these particular criterion measures and the authors' conclusions, based on this single study, about the over-whelming advantages of the client-centered approach. Other studies, using different criterion measures, have come to quite different conclusions. For example, in a recently completed study, Klingelhofer (*The Effects of Educational Counseling on the Scholastic Achievement of Probationary College Students.* Unpublished doctor's dissertation, State University of Iowa, 1953.) found that a highly directive approach in counseling was efficacious, using improvement in the scholastic performance of college stu-

dents on probation as the criterion measure. A survey of the research literature in this area (unfortunately neglected by the authors) would scarcely permit unequivocal statements about the over-all superiority of one counseling technique over another at this time.

This reviewer wonders about the audience for which this text was written. If directed to the professional psychologist, then much of this material such as the discussion of the learning theories of Hull, Tolman, et al, will be quite low level. If, on the other hand, it is aimed at the guidance officer(s) in the secondary school or college, then these discussions require more psychological training than such readers are likely to have. The problem of the audience seems especially acute as the authors do not discuss the problems of counselor training or counselor qualifications. This is especially unfortunate in these times of a growing professional awareness on the part of counselors.

While they do point out that these counseling procedures are usually for the individual with 'personal problems that we all have' and that students with problems 'too involved' should be turned over to a psychologist, no operational definitions of such cases are supplied nor are the possible dangers involved in such cases discussed. No differentiation is made between the counseling procedures recommended by the authors and those to be followed by the psychologist to whom the client is referred. Indeed, no mention is made anywhere in this volume of psychotherapy or of any of the other usual techniques that might be utilized by a clinical psychologist after referral.

The volume is quite readable, very practical, and filled with many 'helpful hints' about counseling and interviewing. Therein lies the danger. A näive, unsophisticated reader may imagine that all counseling is as simple as the authors' specimen cases and can be learned, 'cook book' fashion, with the present volume as the guide. It is extremely unfortunate that the limitations of these client-centered techniques and the necessary cautions that should be followed in all counseling programs are not more fully treated.

LEONARD D. GOODSTEIN

State University of Iowa

NORMAN R. F. MAIER. *Principles of Human Relations*. New York: John Wiley & Sons, Inc., 1952, pp. 456.

Human relations problems have received considerable attention from industrialists and psychologists. Maier's book presents principles and procedures that make important contributions to solutions of these problems. The book is designed to be used by psychologists and by industrial personnel who recognize the problems to be solved but have encountered resistance to the development of better human relations. It may not have as much appeal to industrialists who do not recognize existing problems or to those who have not had enough psychological training to recognize the value of the principles and methods presented. Certainly, trainers looking for a 'recipe book' will be disappointed. However, Maier's book does offer more than enough material to develop an excellent training program if the builder is prepared to exploit what is offered and to tailor the program to the needs.

The design of the book may have placed some limitations upon its use. Maier says: "Basically, supervisory training is a preventative program in the control of attitudes." The discussion is confined to principles and methods for the changing of attitudes. The training of supervisors, on the job, is mainly a problem of this kind. However, the training of employees to take new supervisory jobs may require the development of new concepts and new behaviors as well as the changing of attitudes. Maier recognizes that new behaviors have to be developed from time to time, but he mentions that the usual training methods are adequate for this and goes no further.

Consideration of the content leaves little doubt that the book can be an important aid. Although the chapters are not grouped into sections, there is significant order given to their arrangement. The Introduction clearly sets up a philosophy of training for better human relations in industry. In Chapter Two there is an outline for a training program. The next chapters present methods to be used in training programs and group activities. Discussion methods, rôle-playing, and a group decision procedure are exceptionally well handled. Chapters Eight and Nine contain case studies which are illustrations of the content found in actual situations where the above mentioned methods were used. The last two chapters depart

from group participation and discuss, respectively, the supervisor's dealing with individuals and non-directive counseling.

The author has earned considerable respect for his work and writing. The present book will not lessen this respect. He has written for all persons interested in human relations problems and all of these people should have his book available for reference. The book is valuable because it offers so much that has been subjected to empirical trial and that is so clearly presented. The best human relations programs will always involve much of what has been dealt with in this book.

DUANE C. SHAW

Carnegie Institute of Technology

PUBLICATIONS RECEIVED

RUSSELL L. ACKOFF. *The Design of Social Research.* Chicago: University of Chicago Press, 1953, pp. 420. $7.50

GORDON W. ALLPORT. *The Nature of Prejudice.* Cambridge, Mass.: Addison-Wesley Pub. Co., Inc., 1954, pp. 537. $5.50

KENNETH L. BEAN. *Construction of Educational and Personnel Tests.* New York: McGraw-Hill Book Co., 1953, pp. 231. $4.50.

BRUNO BETTELHEIM. *Symbolic Wounds: Puberty Rites and the Envious Male.* Glencoe, Illinois: The Free Press, 1954, pp. 286. $4.75.

GLENN MYERS BLAIR, R. STEWART JONES, AND RAY H. SIMPSON. *Educational Psychology.* New York: The Macmillan Co., 1954, pp. 601. $4.75.

DOROTHY R. BLITSTEN. *The Social Theories of Harry Stack Sullivan.* New York (313 W. 35th St.): The William-Frederick Press, 1953, pp. 186. $3.50.

TRIGANT BURROW. *Science and Man's Behavior: The Contribution of Phylobiology.* New York: Philosophical Library, 1953, pp. 564. $6.00.

JOHN B. CARROLL. *The Study of Language.* Cambridge, Mass.: Harvard University Press, 1953, pp. 289. $4.75

STUART CHASE. *Power of Words.* New York: Harcourt, Brace & Co., 1954, pp. 308. $3.95.

LUELLA COLE. *Psychology Of Adolescence.* Fourth Edition. New York: Rinehart & Co., Inc., 1954, pp. 712. $6.00.

LEE J. CRONBACH. *Educational Psychology.* New York: Harcourt, Brace & Co., 1954, pp. 628. $5.50.

LESTER D. CROW AND ALICE CROW. *Child Psychology: Summary of Growth and Development with Review Questions and Answers.* New York: Barnes & Noble, Inc., 1953, pp. 267. (paper) $1.50.

ROBERT C. CRAIG. *The Transfer Value of Guided Learning.* New York: Bureau of Publications, Teachers College, Columbia University, 1953, pp. 85. $2.75.

HORACE B. ENGLISH. *The Historical Roots of Learning Theory.* Garden City, N. Y.: Doubleday & Co., Inc., 1954, pp. 21. (paper) $0.65.

H. J. EYSEBCK. *The Structure of Human Personality.* New York John Wiley & Sons, Inc., 1953, pp. 348. $5.75.

ILSE FOREST. *Child Development.* New York: McGraw-Hill Book Co., 1954, pp. 291. $4.00.

LAWRENCE K. FRANK. *Feelings and Emotions.* Garden City, N. Y.: Doubleday & Co., Inc., 1954, pp. 38. (paper) $0.85.

D. C. FRASER. *A Psychological Glossary.* Cambridge, England: W. Heffer & Sons, Ltd., 1954, pp. 40. (paper) 3s 6d.

TIMOTHY GANNON. *Psychology: The Unity of Human Behavior.* Boston: Ginn & Co., 1954, pp. 482. $4.75.

GEORGE E. GARDNER. *Case Studies in Childhood Emotional Disabilities.* Volume I. New York: American Orthopsychiatric Association, Inc., (1790 Broadway), pp. 368. $5.00.

SISTER M. MYNETTE GROSS. *Teaching Success of Catholic Elementary School Teachers.* Washington, D. C.: The Catholic University of America Press, 1953, pp. 129. (paper) $2.25.

GEORGE W. F. HALLGARTEN. *Why Dictators? The Causes and Forms of Tyrannical Rule since 600 B. C.* New York: The Macmillan Co., 1954, pp. 279. $5.50.

FLORENCE HALPERN. *A Clinical Approach to Children's Rorschachs.* New York: Grune & Stratton, Inc., 1953, pp. 270. $6.00.

STARKE R. HATHAWAY AND ELIO D. MONACHESI. *Analyzying and Predicting Juvenile Delinquency with the MMPI.* Minneapolis: University of Minnesota Press, 1953, pp. 153. $3.50.

Health and Human Relations. Report of a Conference on Health and Human Relations Held at Hiddesen near Detmold, Germany, August 2-7, 1951, Sponsored by The Josiah Macy, Jr. Foundation. New York: The Blakiston Co., Inc., 1953, pp. 192.

ARCH O. HECK. *The Education of Exceptional Children.* Second Edition. New York: McGraw-Hill Book Co., 1953, pp. 513. $6.00.

ELIZABETH B. HURLOCK. *Developmental Psychology.* New York: McGraw-Hill Book Co., 1953, pp. 556. $6.00.

CHRISTINE P. INGRAM. *Education of the Slow-learning Child.* New York: The Ronald Press Co., 1953, pp. 359, $5.00.

PEYTON JACOBS. Joe S. Jacobs, Editor. *The Behavior Cycle: An Interpretation of Behavior from the Standpoint of an Educationist.* Ann Arbor, Mich.: Edwards Brothers, Inc., 1954, pp. 126.

ARTHUR T. JERSILD, KENNETH HELFANT AND ASSOCIATES. *Education for Self-understanding.* New York: Bureau of Publications, Teachers College, Columbia University, 1953, pp. 54. (paper) $0.85.